

EXHIBIT 1



MISSION STATEMENT

TIGHAR (pronounced "tiger") is the acronym for The International Group for Historic Aircraft Recovery, a non-profit foundation dedicated to promoting responsible aviation archaeology and historic preservation. TIGHAR's activities include:

- Compiling and verifying reports of rare and historic aircraft surviving in remote areas.
- Conducting investigations and recovery expeditions in co-operation with museums and collections worldwide.
- Serving as a voice for integrity, responsibility, and professionalism in the field of aviation historic preservation.

TIGHAR maintains no collection of its own, nor does it engage in the restoration or buying and selling of artifacts. The foundation devotes its resources to the saving of endangered historic aircraft wherever they may be found, and to the education of the international public in the need to preserve the relics of the history of flight.

THE INSTITUTE FOR AVIATION HISTORY *Preserve, Explore, Inspire*

BOARD OF DIRECTORS

C. Graham Berwind III, Fort Lauderdale, Florida
 William Carter, Boise, Idaho
 Arthur G. Carty, Wells, Maine
 Richard B. Gifford, Aurora, Colorado
 Richard E. Gillespie, Wilmington, Delaware
 Thomas F. King, Ph.D., Silver Spring, Maryland
 Russell E. Matthews, Redondo Beach, California
 Patricia R. Thrasher, Wilmington, Delaware

Click [HERE](#) to view TIGHAR's most recent Form 990, Return of Organization Exempt From Income Tax.

EXECUTIVE DIRECTOR



TIGHAR TIMELINE

Richard E. Gillespie

Born: 1947
Education: B.A. History, 1969, State University of New York, Oswego
Military: 1970–1973, United States Army officer, 1st Cavalry Div.
Aviation: Commercial Certificate with Instrument and Multi-Engine Ratings
1973–1984: Aviation accident investigator and risk manager for the aviation insurance industry.
January 1985: Founded The International Group for Historic Aircraft Recovery.
January 1985 present: Executive Director of TIGHAR. Research to management, fundraising, media relations, and principal author of the foundation's newsletter/journal *TIGHAR Tracks*.

HOW YOU CAN HELP

EXHIBIT

tables:
/

And as in prospects, we are there pleased most where something keeps the eye from being lost, and leaves us room to guess; so here the eye and mind is no less affected with these stately ruins, than they would have been when standing and entire. They breed in generous minds a kind of pity, and sets the thoughts a-work to make out their magnifice as they were taken in perfection. These remains are "tanquam Tabulata Naufragii", that after the revolution of so many years and governments, have escaped the teeth of Time, and (which is more dangerous) the hands of mistaken Zeal.

John Aubrey
1697

ABOUT TIGHAR	JOIN TIGHAR	DONATE	TIGHAR STORE
PROJECTS	PUBLICATIONS	SERVICES	FIELD SCHOOLS
FORUM	CONTACT US	HOME	SITE MAP



Copyright 2013 by TIGHAR, a non-profit foundation. No portion of the TIGHAR Website may be reproduced by xerographic, photographic, digital or any other means for any purpose. No portion of the TIGHAR Website may be stored in a retrieval system, copied, transmitted or transferred in any form or by any means, whether electronic, mechanical, digital, photographic, magnetic or otherwise, for any purpose without the express, written permission of TIGHAR. All rights reserved.

Contact us at: info@tighar.org • Phone: 610.467.1937 • [Membership form](#)

EXHIBIT 2



Niku VI



DEPOSITION
EXHIBIT
31
Gillespie

EXPEDITION REPORT

to the
Phoenix Islands Protected Area Management Committee

TIGHAR · The International Group for Historic Aircraft Recovery

2812 Fawkes Drive · Wilmington, Delaware · USA · 19808

302.994.4410 · www.tighar.org

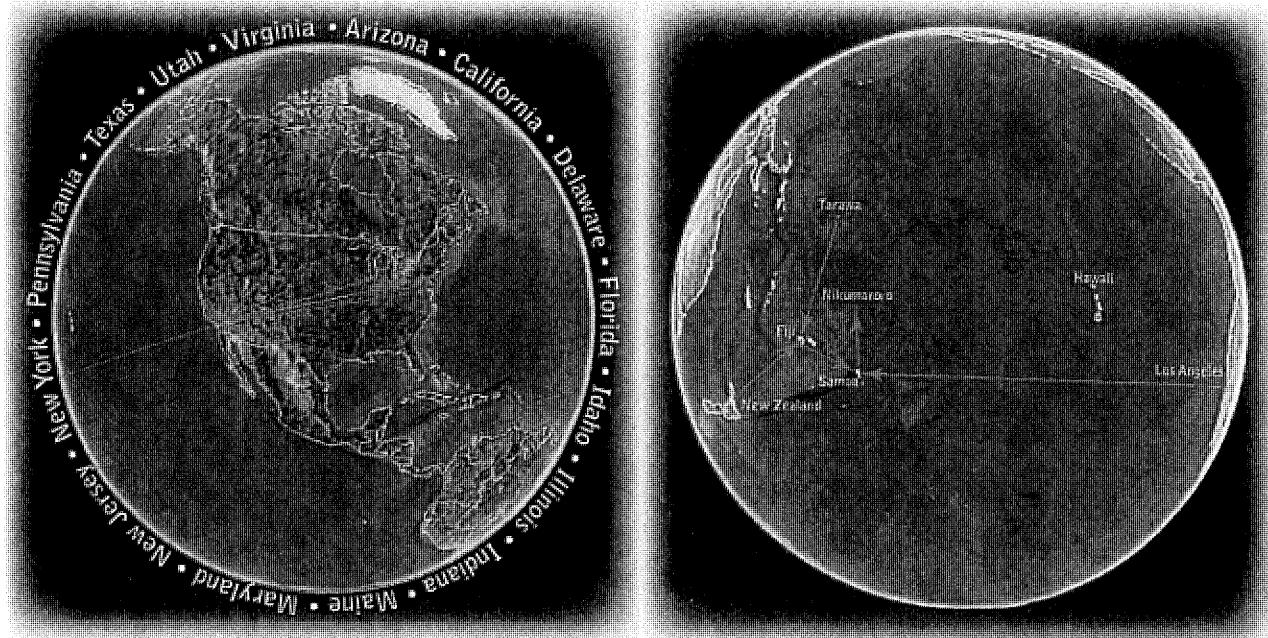


DATES

The expedition spanned 27 days departing Los Angeles on May 18 and returning to Los Angeles on June 14, 2010.

LOGISTICS

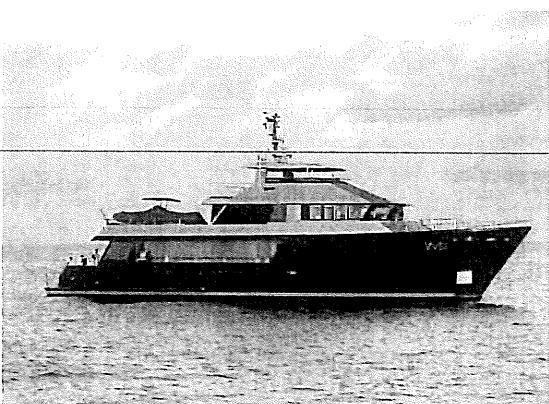
Researchers and technology from the U.S., Kiribati Government officials from Tarawa, and vessels from Fiji and New Zealand staged through Apia, Samoa en route to Nikumaroro.



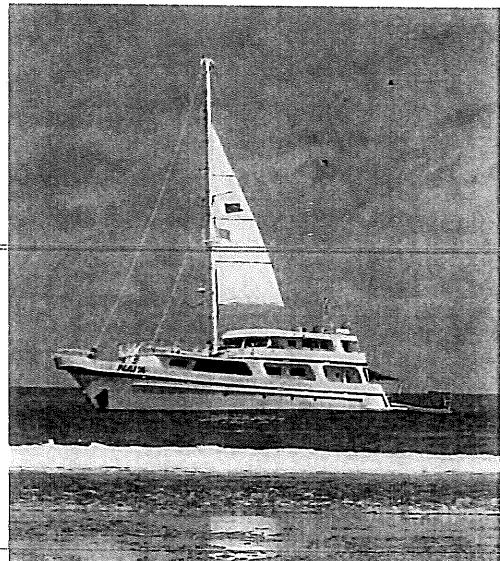
VESSELS

Two vessels supported the expedition. The primary expedition vessel was R/V (Research Vessel) *Nai'a*, a 120 foot motor-sailer based in Fiji. TIGHAR had used *Nai'a* on four previous expeditions to Nikumaroro. *Nai'a* arrived at Nikumaroro on May 23 and departed the island on June 11, 2010.

A second expedition vessel, the 111 foot motor yacht M/Y *VuSI*, arrived at Nikumaroro on June 6 and departed the island with *Nai'a* on June 11, 2010.



VuSI



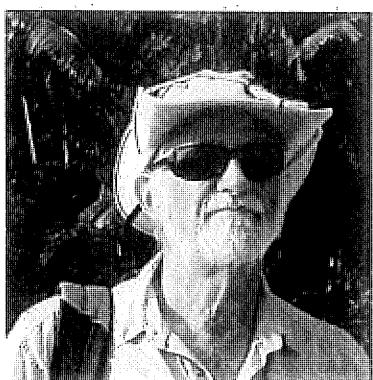
Nai'a

PERSONNEL

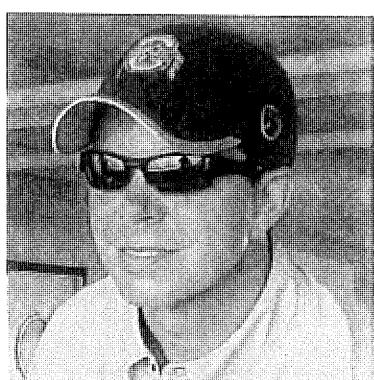
Aboard *Nai'a* were:



Ric Gillespie, Expedition Leader,
TIGHAR Executive Director, 9th trip
to Nikumaroro



Tom King, Ph.D., Senior Archaeolo-
gist, TIGHAR Board of Directors,
6th trip to Nikumaroro



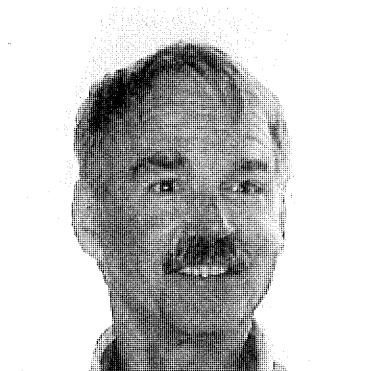
Bill Carter, TIGHAR Board of Direc-
tors, 3rd trip to Nikumaroro



Megan Lickliter-Mundon, Archae-
ologist, 1st trip to Nikumaroro



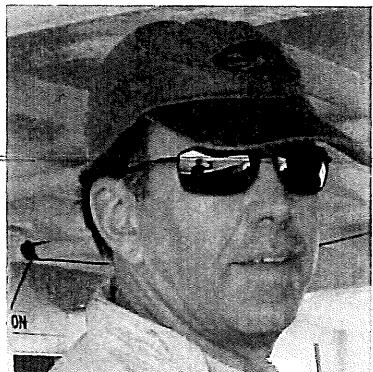
Gary Quigg, Archaeologist, 5th trip
to Nikumaroro



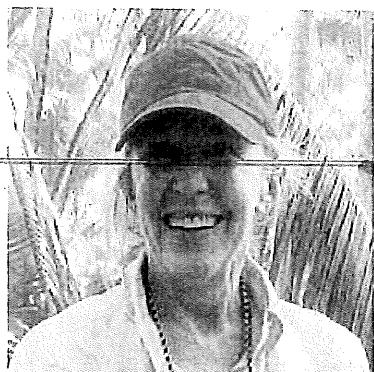
John Clauss, 10th trip to Nikuma-
roro



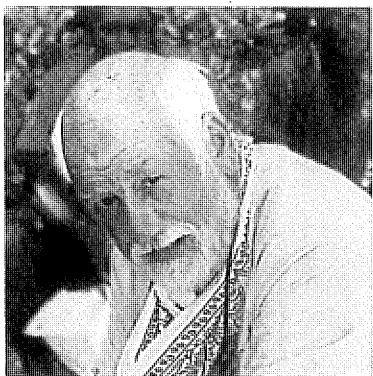
Andrew McKenna, 3rd trip to Niku-
maroro



Walt Holm, 5th trip to Nikumaroro



Lonnie Schorer, 3rd trip to Nikuma-
roro



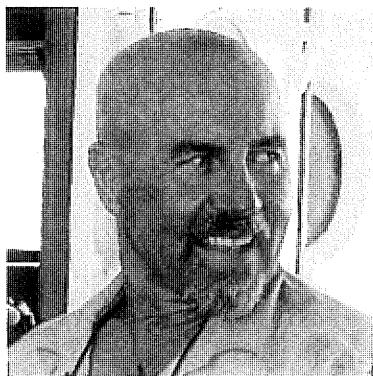
Tom Roberts, 2nd trip to Nikumaroro



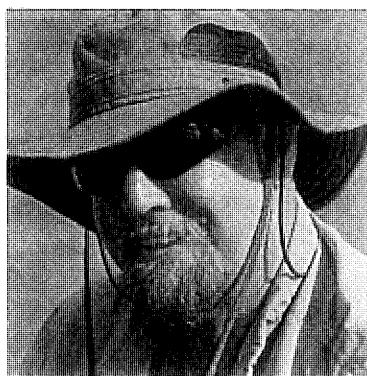
Jon Overholt, MD, Physician, 1st trip to Nikumaroro



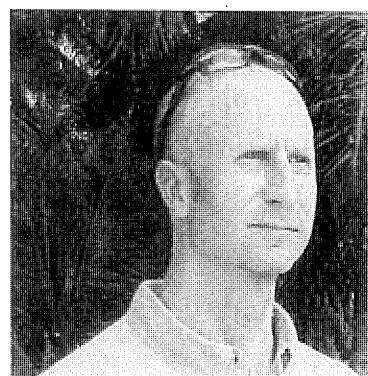
Leonid Sagalovsky, 1st trip to Nikumaroro



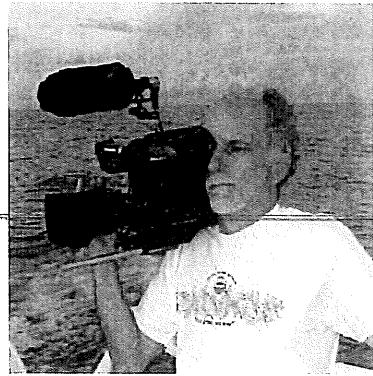
Karl Kern, 1st trip to Nikumaroro



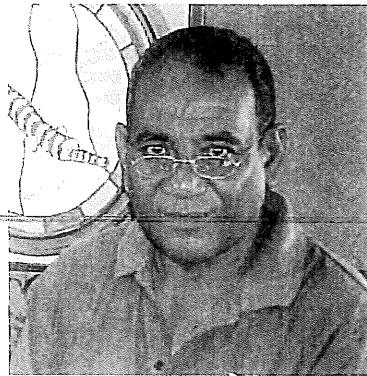
Curtis Webster, 1st trip to Nikumaroro



Jesse Rodocker, Underwater Search Technician, 1st trip to Nikumaroro

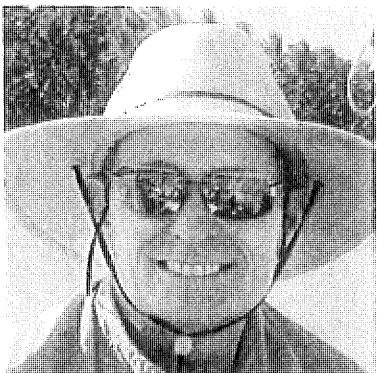


Mark Smith, Discovery Channel Cameraman/Field Producer, 3rd trip to Nikumaroro

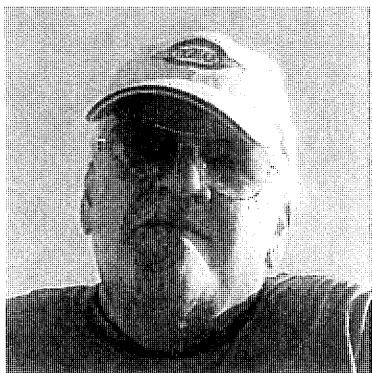


Takirua Tabuu, Kiribati Customs Officer, 2nd trip to Nikumaroro

Aboard *VuSI* were:



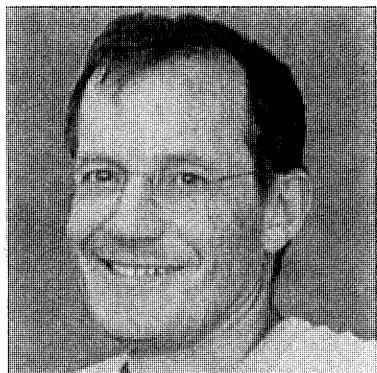
Graham Berwind – TIGHAR Board of Directors, 1st trip to Nikumaroro



Art Carty - TIGHAR Board of Directors, 1st trip to Nikumaroro



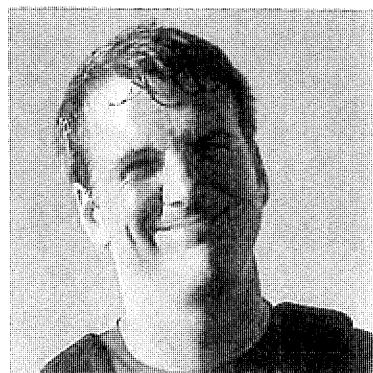
Janis Carty - 1st trip to Nikumaroro



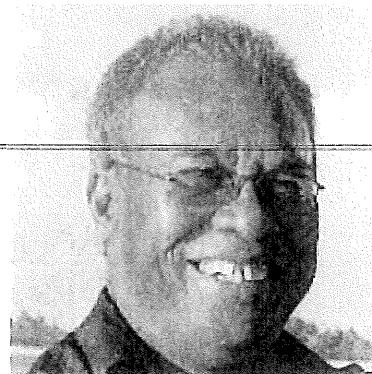
Dan Lann, MD – Physician, 1st trip to Nikumaroro



Taylor Keen – Ground Penetrating Radar Technician, 1st trip to Nikumaroro



Erin Harvey - Discovery Channel Cameraman, 1st trip to Nikumaroro



Ioneba Temoai – Observer/Representative for Phoenix Islands Protected Area & Kiribati Fisheries, 1st trip to Nikumaroro

COST

Expenses excluding TIGHAR overhead:

Travel (airfare, hotels, etc.)	\$35,561.20
Ship Charters	\$491,139.00
Video Documentation	\$11,052.00
Kiribati & PIPA Representatives (travel and per diem)	\$5,542.57
Underwater Search Contractor	\$33,903.77
Equipment	<u>\$16,989.49</u>
Total	US\$594,188.03

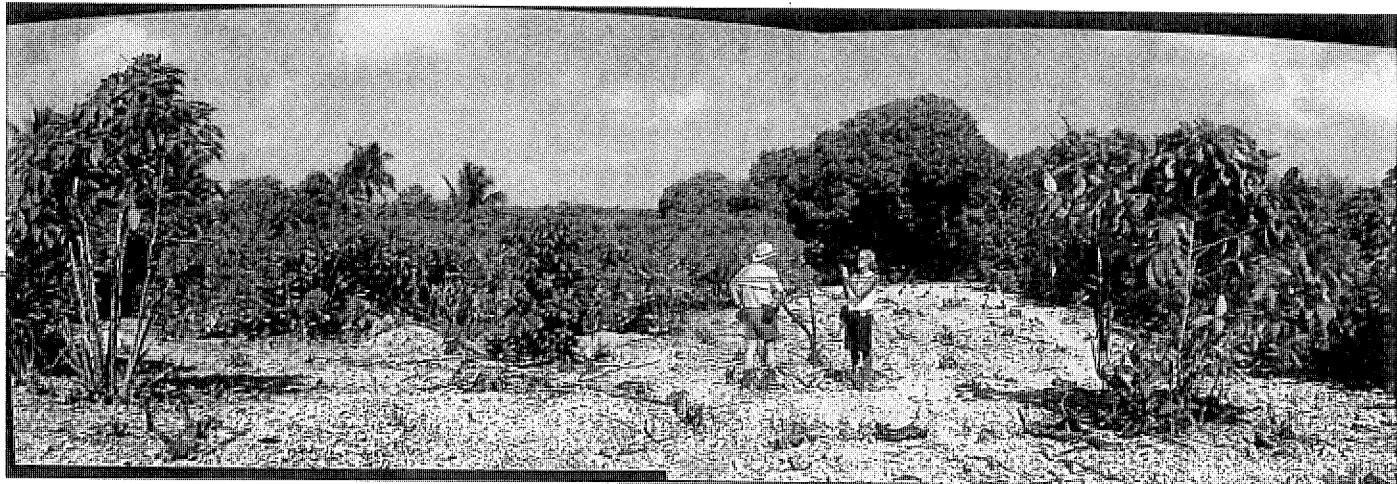
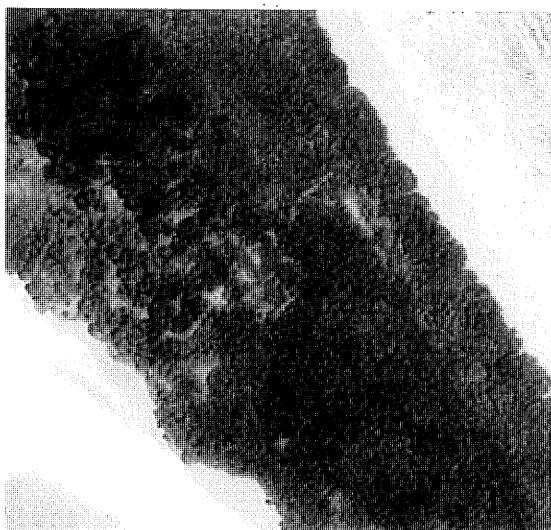
AREAS COVERED



As described in the application for the PIPA permit for this expedition, the objectives of the proposed 2010 research were:

- a. *To continue study of the "Seven Site" at the southeast end of the island, which historical and archaeological data associate with the site where a partial human skeleton, a woman's shoe, a sextant box and other artifacts were found in 1940 by residents of the village established in 1938 as part of the Phoenix Islands Settlement Scheme.*

This objective was achieved. An irregularly shaped area of approximately 1,000 square meters was cleared and examined as described in **Appendix A – Excavations at the Seven Site.**

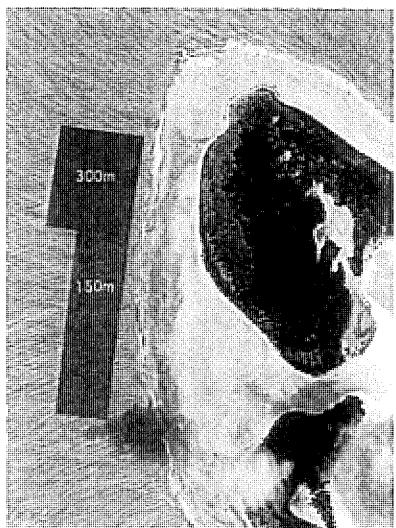
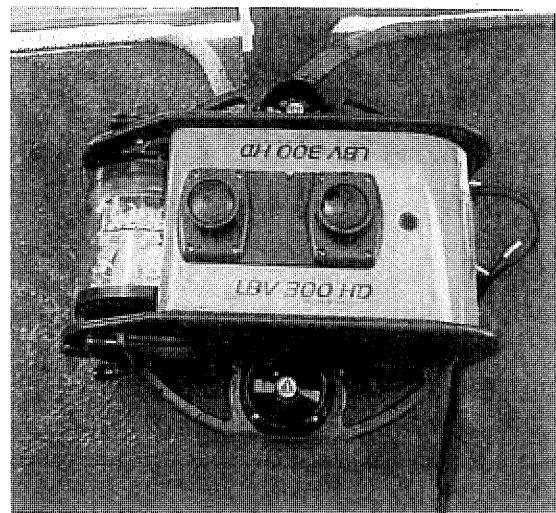


- b. *To carry out focused research in the old colonial village at Ritiati in the north-central part of the island. Specifically, we want to excavate one or more cooking sites in the village to confirm that the cooking sites identified at the Seven Site are unlike those used by the colonists and are more consistent with a European castaway.*

This objective was not achieved. Despite several attempts, a discreet cooking site could not be found in the abandoned village.

c. To conduct an underwater Remote Operated Vehicle (ROV) search of the reef slope along the island's western shoreline to test the hypothesis that the area holds wreckage from the Earhart aircraft.

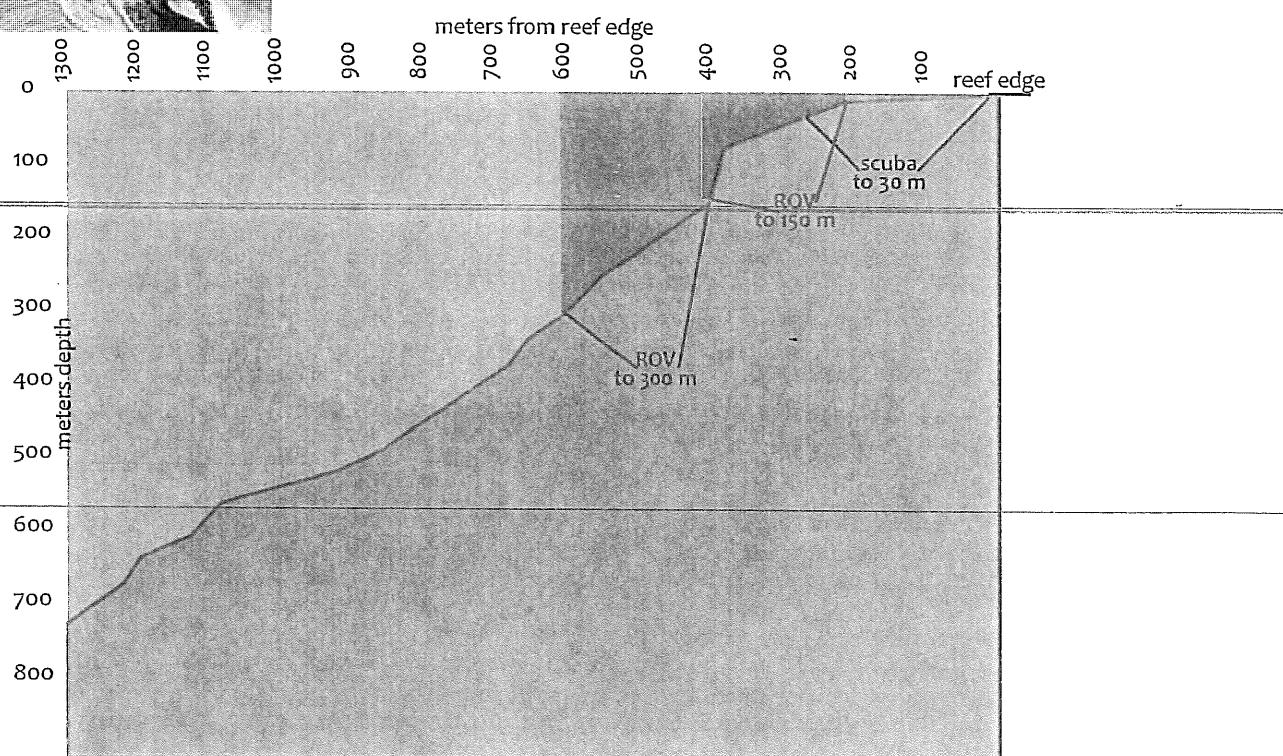
This objective was partially achieved. The underwater search component of the expedition was contracted to Seabotix, Inc., a manufacturer of small Remote Operated Vehicles (ROVs) known as Little Benthic Vehicles (LBVs). Jesse Rodocker, Seabotix Director of Marketing, operated the LBV assisted by TIGHAR team members John Clauss and Walt Holm.



An area off the west end of the atoll roughly 1,400m long (north and south) and 300m wide (east and west) was searched to a depth of 150m. An area approximately 400m long (north and south) and 150m wide (east and west) was searched to a depth of 300m.

The underwater search was not as extensive as had been planned due to equipment and weather problems. Except for the expected wreckage from the SS *Norwich City*, very little man-made material was identified and none was immediately identifiable as airplane debris.

The reef slope was found to be steeper than anticipated. Any aircraft debris is likely to be deeper than this expedition was equipped to search.



Approximately 80% of the lagoon was surveyed using side-scan sonar. Several anomalies were found but could not be identified by divers due to low visibility.

d. Make observations to assist in measuring the extent to which rising sea levels are eroding the island shoreline, particularly along the Ritiati shore where we have observed steadily increasing damage over the last fifteen years or so.

This objective was achieved. No significant erosion of the island shoreline was observed since our last visit in 2007 but there was clear evidence along the atoll's west shoreline of continued seawater incursions inland during storms.

WHAT WAS FOUND

Artifacts

186 artifacts were recovered of which 107 have been cataloged to date. For a list and short description see **Appendix B: Niku VI Artifacts (partial)**. For list of artifacts from all expeditions see **Appendix C: Earhart Project Artifacts**.

Some of the broken glass artifacts show evidence of secondary use as tools for cutting or scraping. For a report by anthropologist Geoffrey Cunnar, Ph.D., see **Appendix D: Examining Evidence for Secondary Use on Historic Glass Associated with the Possible Landing Site of Amelia Earhart and Fred Noonan on Nikumaroro Island**.

Identification and analysis of dozens of artifacts are on-going.

Faunals

Large numbers of fish and bird bones were collected in, or associated with, ash and charcoal deposits. Several hundred mollusk shells were collected as well as bones from at least one turtle.

For an analysis of the fish bones by anthropologist Sharyn Jones, Ph.D., Assistant Professor, Department of Anthropology, University of Alabama at Birmingham, see **Appendix E: Report on Zooarchaeological Remains from the Seven Site, Nikumaroro, Phoenix Islands**.

For an analysis of the bird bones by Sara L. Collins, Ph.D., Senior Archaeologist and Osteologist, Pacific Consulting Services, Inc., Honolulu, Hawaii, see **Appendix F: Analysis of TIGHAR Faunal Materials**.

An analysis of the mollusk shells is being made by Judith R. Amesbury of Micronesian Archaeological Research Services in Guam but is not yet completed.

Possible Human Remains

Bone fragments that might be of human origin were collected and are being examined for DNA at the University of Oklahoma Molecular Anthropology Laboratories. Material collected in 2007 that appears to be dried fecal matter is also being tested. For a progress report on the testing by Cecil M. Lewis, Jr., Ph.D., see **Appendix G: Earhart DNA Research Update**.

INTERPRETATION

Analyses of the artifacts, faunals and data collected during the expedition are on-going but, at this point, everything supports the hypothesis that the remains found at the site in 1940 were those of Amelia Earhart.

EXHIBIT 3

From: Jeff Glickman <jeff@glickman.com>
Subject: RE: Objects
Date: April 26, 2011 12:45:29 AM EDT
To: 'Ric Gillespie' <tigharic@me.com>, 'John Clauss' <claussenter@cs.com>, 'Bob Brandenburg' <rbrandenburg@san.rr.com>, 'Bill Carter' <carter@dean-carterlaw.com>, 'Art Carty' <acarty@maine.rr.com>, 'Randy Jacobson' <rjacobson@KNOLOGY.NET>, 'Walt Holm' <WaltHolm@aol.com>

OBJECT INTERPRETATION

Here are my preliminary interpretations:



Object 11: Probably whip coral

Object 4: Possibly a broken shell

Object 9: This image is too indistinct to support interpretation. An adjacent frame may have better image quality.

Object 10: Rope with a splice.

Object 5: Possibly a rod. Another possibility is that it could be a taught cable.

Object 3: Insufficient context to support interpretation. Adjacent imagery is needed for interpretation.

Object 7. Probably coral

Object 6. Possibly a rod. Another possibility is that it could be a taught cable.

Object 8. Probably rope.

It should be noted that imagery associated with Object 10, Rope with Splice, shows a metal hook attached to the loop formed by the rope looping back to the splice.

Jeff B. Glickman, BSCS, BCFE, FACFE, DABFE



Member, IEEE Technical Committee on Semantic Computing
Member, State of Washington Forensic Investigations Council
Vice-President, American Society for Photogrammetry and Remote
Sensing, Puget Sound Region

146_#\$!@%#!# Senior Member, IEEE Board Certified Forensic Examiner
____unknown.jpg Fellow, American College of Forensic Examiners
Diplomate, American Board of Forensic Examiners
Member, Association for Computing Machinery

19405 148th Ave NE
Woodinville, WA 98072
Phone: (425) 908-7601
Fax: (866) 201-0239
Email: jeff@glickman.com

The information contained in this transmission may be privileged and confidential and is intended only for the use of the person(s) named above. If you are not the intended recipient, or an employee or agent responsible for delivering this message to the intended recipient, any review, dissemination, distribution or duplication of this communication is strictly prohibited. If you are not the intended recipient, please contact the sender immediately by reply e-mail and destroy all copies of the original message. If you, as the intended recipient of this message would not like to receive further e-mail correspondence from the sender, please "reply" to the sender indicating your wishes. In the U.S.: 19405 148th Ave NE, Woodinville, WA 98072.

-----Original Message----- From: Ric Gillespie
[mailto:tigharic@me.com] Sent: Sunday, April 24, 2011 10:04 AM
To: John Clauss; Jeff Glickman; Bob Brandenburg; Bill Carter; Art
Carty; Randy Jacobson; Walt Holm Subject: Objects

Preliminary Discussion of Suspicious Objects in Underwater Video

Jesse saw man-made objects, or what he thought might be man-made

EXHIBIT 4

Forensic Evaluation of Video Footage from the TIGHAR 2010 and 2012 Nikumaroro Expedition

By: John D. Jarrell, PhD, PE and Prof. Graham Forrester, PhD

June 3, 2013

Introduction:

Positively identifying wreckage of historical significance, located in a remote area of the planet and under hundreds of feet of ocean waters is challenging and requires a scientific approach to methodology. Photointerpretation, as explained by the forensic image analysis expert working with TIGHAR, Jeff Glickman, includes taking the following list of items into consideration¹.

1. Differences in organic (natural) vs. man-made shapes.
2. Texture differences between objects within a neighborhood.
3. Pattern differences between objects within a neighborhood.
4. Color differences within multiple color spaces within a neighborhood.
5. Color absorption differences (spectrometry) between specific objects.
6. Temporal similarities vs. differences between video frames.
7. Object size and scale information which may be relative, absolute and ratiometric (mensuration).
8. Object interaction with its environment.
9. Location information including absolute position, relative position and context.

Methods:

Our team's methodology began with a frame by frame review of the underwater videos of the proposed crash site provided by TIGHAR, dated 2010 and also reviewed 2012 footage. These were viewed to visually identify potential objects associated with the Lockheed "Electra" Model 10E, Construction Number (c/n) 1055 aircraft, cabin contents and the crew members Amelia Earhart and navigator Fred Noonan. The potential candidates included those suggested by our team members and others identified by other individuals in public forums. A full range of items from specific plane parts to highly speculative and imaginative proposals were given consideration. From this group of potential candidates, those most suited for evaluation by mensuration, where selected for geometric comparison with specific objects or parts associated with the aircraft and it's last flight. Multiple still frames of video were captured for the proposed objects and the proposed object outlined by a Professional Mechanical Engineer using computer drawing software (Microsoft Office Professional 2010). We relied upon historical photographs of the plane and of objects similar to those which were in the original plane for establishing the relative size and geometry of objects. Since the original blue prints of the plane were not available, we made use of the limited edition scale drawings completed by aircraft modeller William F. Harney in 2002 and published by TIGHAR in 2009. To corroborate the drawings and historical photographs, we inspected and photodocumented two of the approximately twelve Lockheed Electra Model 10s currently in existence. One of the documented aircraft was as a

Model 10A, c/n. 1052, located at the New England Air Museum in Windsor Locks, CT, the second was the only remaining Model 10E, Electra, c/n 1042, owned by, Grace McGuire of San Diego, CA. The McGuire Electra also had disassembled parts of the front and rear landing gear available for inspection and photography. The geometry of specific engineered plane parts was outlined with software to convert them into line drawings. These geometric shapes and outlines of actual parts were rotated and superimposed on the line drawings made of the proposed objects from the high resolution video still images. A modified superimposition method was performed by optimally translating, rotating and uniformly scaling the line drawings taken from actual plane parts to obtain the best fit with the line drawings made from the proposed objects in the video. That is, the two sets of drawing were used to determine if multiple geometric elements were a good fit. Multiple sets of drawings taken from the separate video still images were compared to the line drawings of the actual objects. The relative size and shape of multiple geometric elements were used to positively identify geometric congruence between proposed object and actual plane parts.

It was important to consider the possibility that objects observed on the slopes of the atoll were natural formations, derived from the coral reefs growing in shallower water. The accretion of reefs by corals and other organisms produces limestone objects that can be mistaken for man-made objects, particularly when broken and eroded over time. A specialist in coral reef ecology also reviewed the video and still images to identify objects least likely to be natural and to confirm that the objects positively identified by mensuration as corresponding to parts of a Lockheed Electra Model 10, were not merely natural formations and creatures mistaken for man-made objects. The specialist was also relied upon to comment on the effects of encrustation of natural debris and man-made objects over time.

Examples of historical objects superimposed upon the video are presented in the Figures Section.

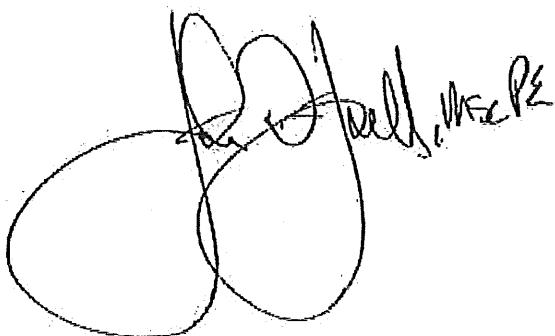
Conclusions:

From our review of the data, we have the following conclusions in regard to the 2010 TIGHAR video footage:

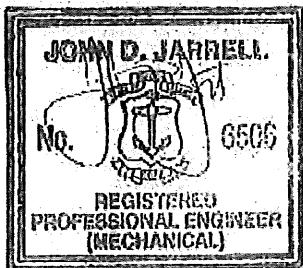
- 1) In addition to the rope/cable and wire clearly seen in the video from 2010, there are other objects observed which are man-made, by virtue of the fact that they are inconsistent with natural formations;
- 2) There is an object consistent in shape and geometry with a tailwheel as determined by geometric comparison with the tire and fork from a Lockheed Electra Model 10.
- 3) There is a collection of objects atypical of naturally occurring formations in some details of shape and coloration, but consistent with the front landing wheel, worm gear and strut assemblies; This object was determined to be more likely man-made than a naturally occurring formation. Our observation from the 2010 video are consistent with representation made in the TIGHAR bulletin concerning the 2012 video, where it states, "We have located a man-made debris field that is in the location that was expected and for which the shapes of the objects in the debris field are consistent with the object(s) seen in the Bevington image.";

- 4) There is the appearance of a black symmetrical object that is not of natural origin;
- 5) There is a black spiraled object which is almost certainly not of natural origin, consistent with historic, braided copper electrical wire; Such wire was present on the Earhart Lockheed Electra Model 10;
- 6) There is a separate debris field, approximately 400 meters from this location with objects from a known shipwreck (S.S. *Norwich City*);
- 7) The investigations of this region of the ocean floor and debris fields by the TIGHAR organization did not demonstrate migration of the S.S. *Norwich City*, shipwreck debris to the second location;
- 8) The objects in the 2010 video are not consistent with the objects from the shipwreck hull and superstructure debris field located approximately 400 meters away;
- 9) The objects we have identified in the 2010 video footage are consistent with parts of the Earhart Lockheed Electra Model 10 and, in the absence of an alternative explanation for the source of those objects, we conclude that they are likely to have originated from Earhart's Electra.

Sincerely,
Materials Science Associates, LLC



Prof. Graham Forrester, PhD
Aquatic Ecologist



Case 1:13-cv-00118-SWS Document 37-1 Filed 02/28/14 Page 4 of 12

Figures Section



Figure 1. Image of crashed Electra, showing Vee antenna (top insert) and rope and tie down wires (bottom insert).

Case 1:13-cv-00118-SWS Document 37-1 Filed 02/28/14 Page 5 of 12

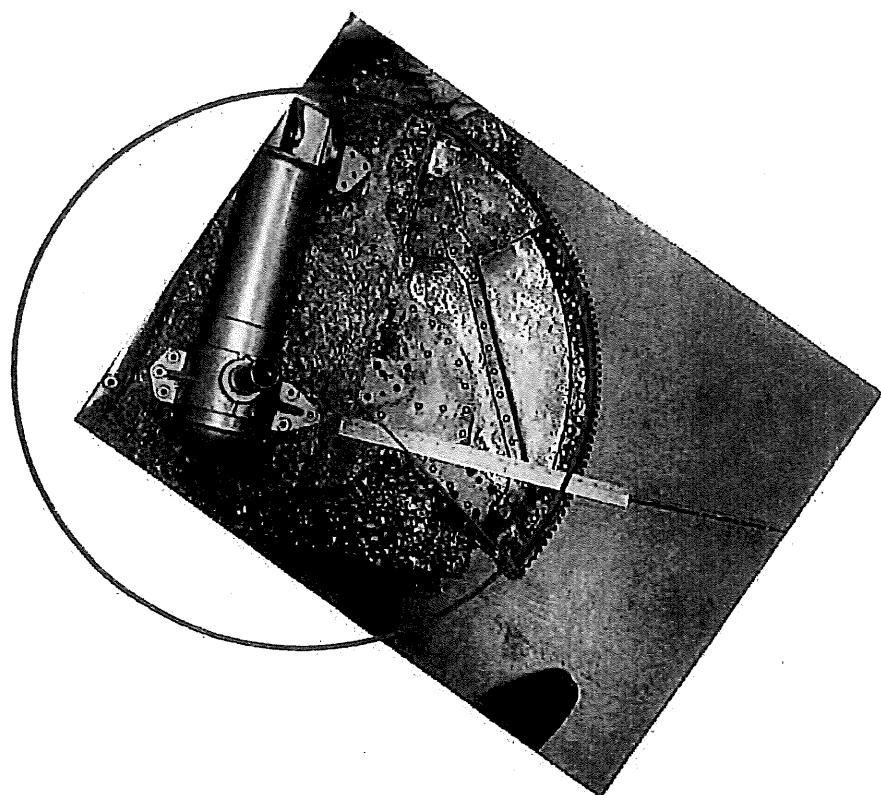


Figure 2. Image of Historic Lockheed Electra Model 10E worm gear (Grace McGuire). The object is represented by the intersection of two rays with a circle.

Case 1:13-cv-00118-SWS Document 37-1 Filed 02/28/14 Page 6 of 12

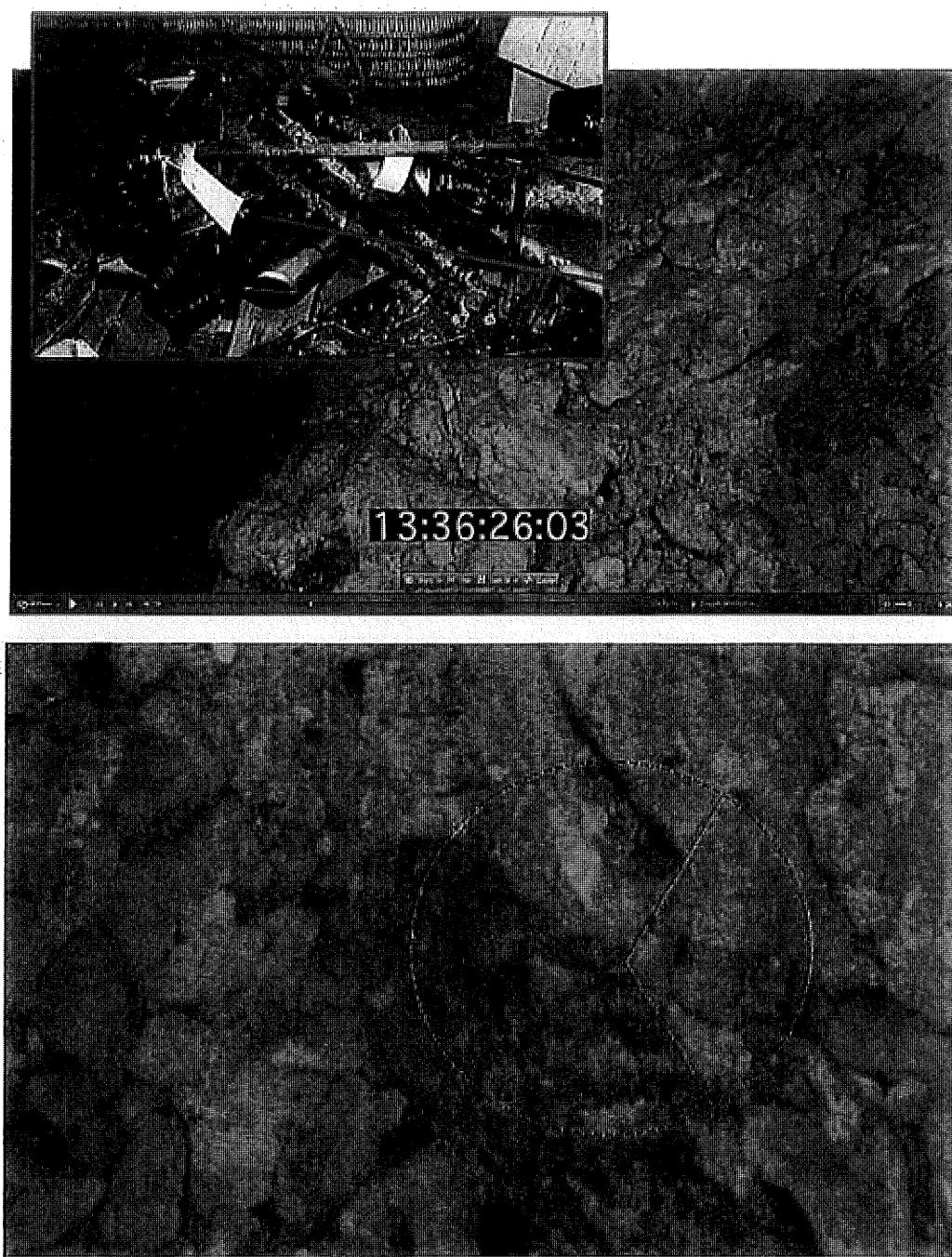


Figure 3. Top left image shows an assemblage of landing gear and worm gears from historical Lockheed Electra Model 10 (New England Air Museum in Windsor Locks, CT). Image of video still (middle) showing the appearance of landing gear and a worm gear. Bottom image shows portion of video image enlarged, cropped and rotated, with two rays creating an arc with an intersecting circle used to represent the proposed object.

Case 1:13-cv-00118-SWS Document 37-1 Filed 02/28/14 Page 7 of 12

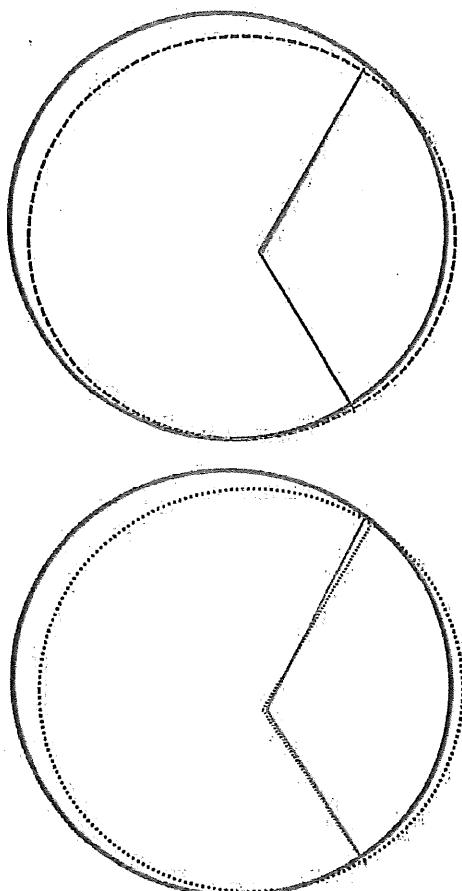


Figure 4. Two examples comparing the congruence of geometric traces of the actual historic worm gear (blue lines) transposed on traces made from two different video stills of the proposed worm gear in the wreckage (red lines).



Figure 5. Video still image showing a proposed front landing gear. Insert shows proposed landing gear cropped and rotated to the vertical position with the outline of historic landing gear super-imposed upon it. Fork and mud guard are rotated 50 degrees in the x-axis. The mud guard is shown to be rotated along the y-axis, so as to cover most of the tire. The tire is deflated to hub width and bent in the z-axis slightly. There is good relative position and aspect ratios between the three front wheel elements and the object identified in the video still image.

Case 1:13-cv-00118-SWS Document 37-1 Filed 02/28/14 Page 9 of 12



Figure 6. Black symmetrical object from cropped and enlarged still images from the 2010 video, consistent in appearance with a man-made object.

Case 1:13-cv-00118-SWS Document 37-1 Filed 02/28/14 Page 10 of 12

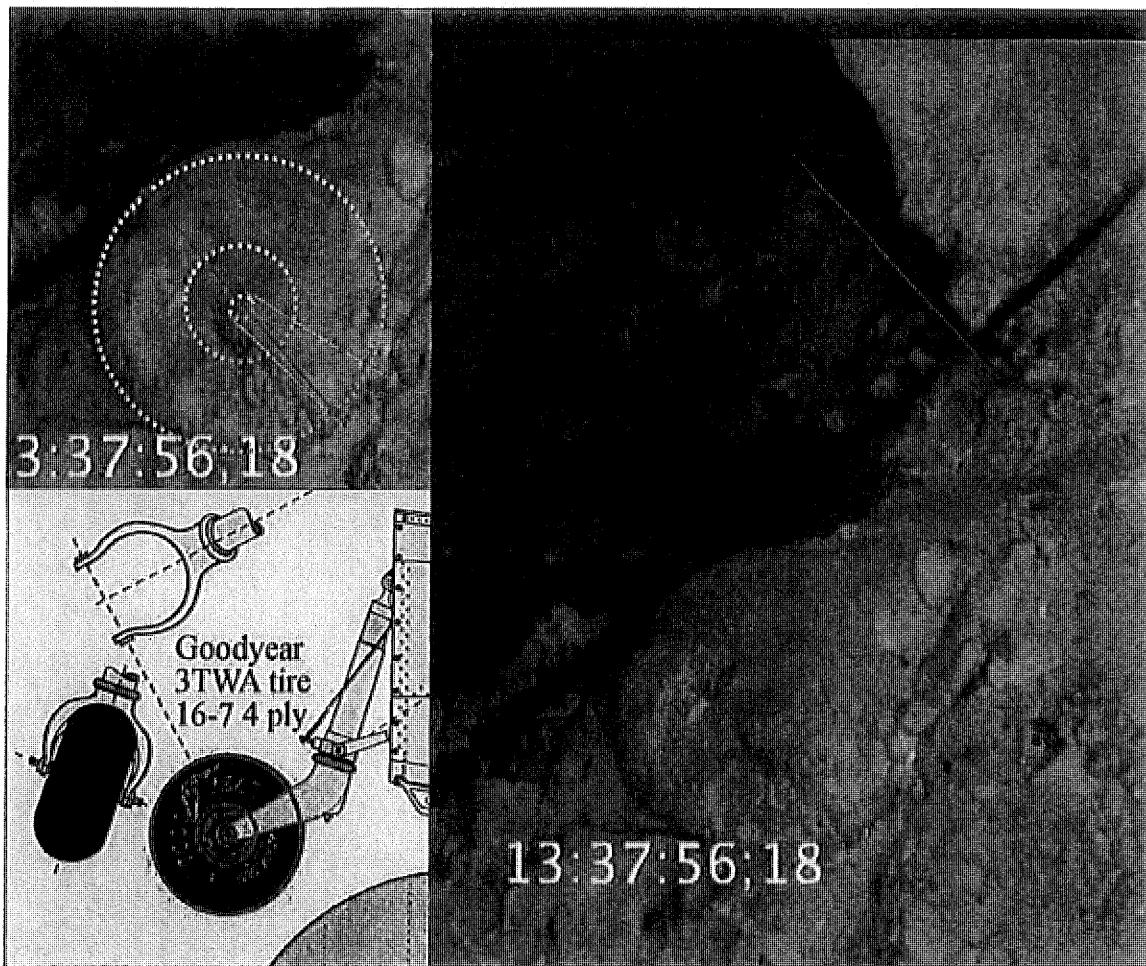
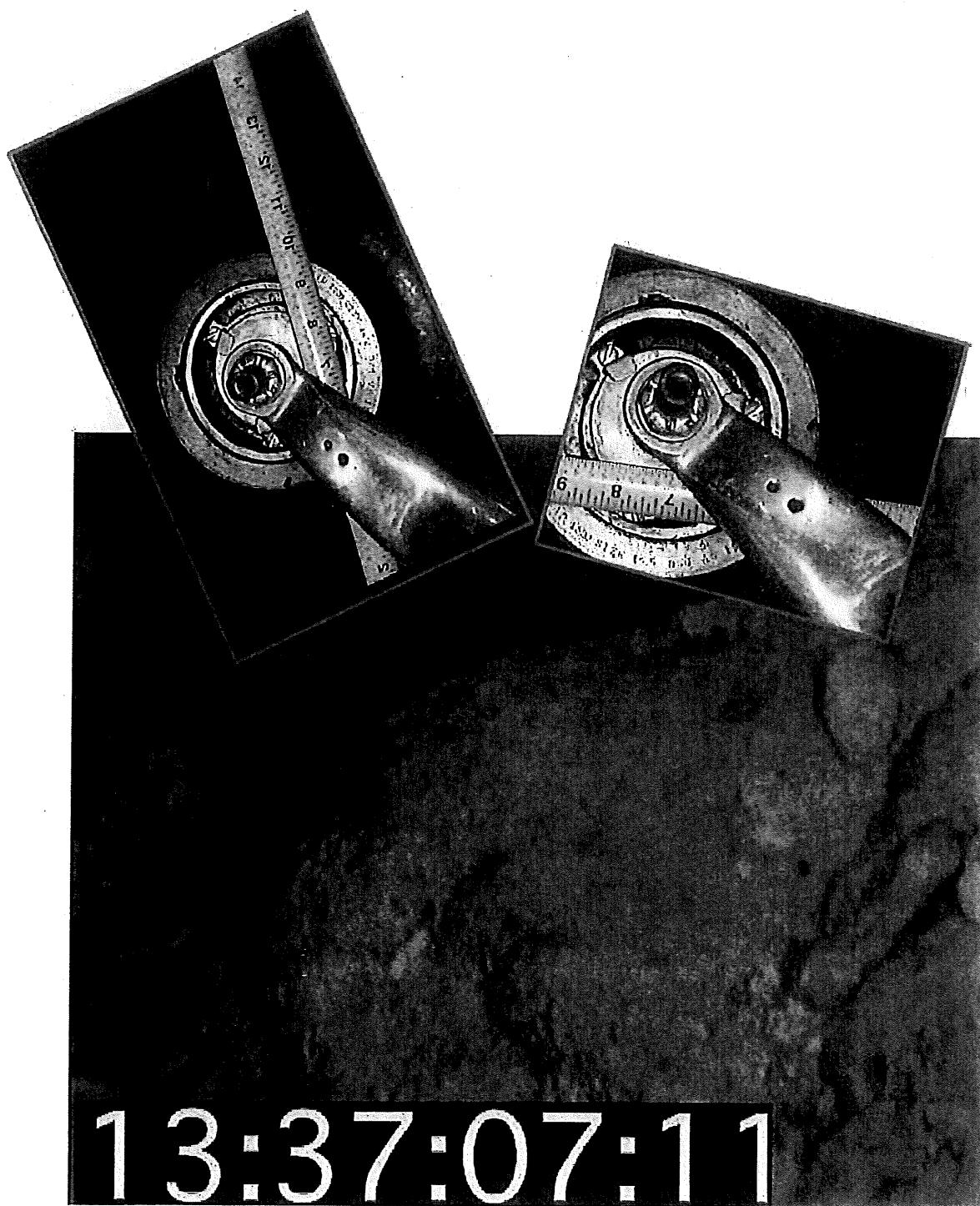


Figure 7. Video still showing a cable and the appearance of a circular object. The inserts show the outline of the Electra tailwheel from scale drawings compared to scale drawings (William F. Harney) compared to a region of the video still. Given that the outlined object is the rear tire of an Electra 10E, with a tire diameter of 16", then cable is over approximately 0.37" diameter at the thin region, not accounting for encrustation.

Case 1:13-cv-00118-SWS Document 37-1 Filed 02/28/14 Page 11 of 12



13:37:07:11

Figure 8. Images of historic tailwheel (top insets, New England Air Museum in Windsor Locks, CT) adjacent to cropped and enlarged image of the proposed tailwheel in the wreckage from the 2010 video still image.

Case 1:13-cv-00118-SWS Document 37-1 Filed 02/28/14 Page 12 of 12

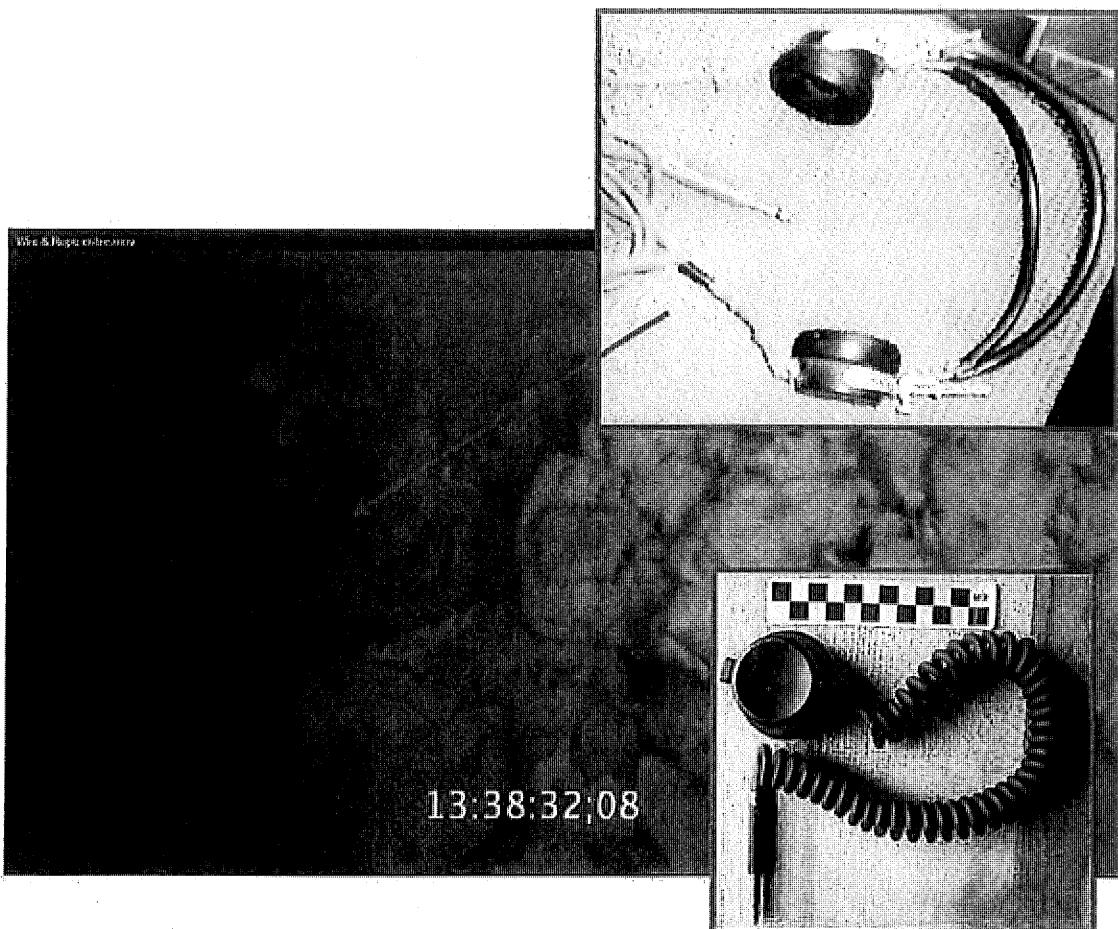


Figure 9. Black wiry object in 2010 video (arrow) and example of historic shielded cable (top insert). Bottom insert is a Western Electric 631B microphone insert compared to close-up of black wire from 2010 video still image 13:38:32;08. Head piece and pig-tail cord of the microphone are to scale with the objects in the video still image as shown in blue-dashed outline. (Note, pig-tail added at a later date, but of similar wire diameter). Top insert is of a Western Electric REG US PAT OFF USA 588A.

<http://www.wehrmacht-awards.com/forums/showthread.php?t=211714&highlight=western+electric>

ⁱ http://tighar.org/Projects/Earhart/Archives/Research/Bulletins/63_DebrisField/63_DebrisField.htm, TIGHAR, Earhart Project Research Bulletin, August 26, 2012

ⁱⁱ http://tighar.org/Projects/Earhart/Archives/Research/Bulletins/65_DebrisFieldAnalysis/65_DebrisFieldAnalysis.htm, TIGHAR, Earhart Project Research Bulletin #65 from October 2, 2012

EXHIBIT 5

The information contained in this transmission may be privileged and confidential and is intended only for the use of the person(s) named above. If you are not the intended recipient, or an employee or agent responsible for delivering this message to the intended recipient, any review, dissemination, distribution or duplication of this communication is strictly prohibited. If you are not the intended recipient, please contact the sender immediately by reply e-mail and destroy all copies of the original message. If you, as the intended recipient of this message would not like to receive further e-mail correspondence from the sender, please "reply" to the sender indicating your wishes. In the U.S.: 19405 148th Ave NE, Woodinville, WA 98072.

**DEPOSITION
EXHIBIT**
33
Gillespie

-----Original Message----- From: Ric Gillespie [mailto:tigharic@mac.com] Sent: Sunday, April 10, 2011 9:01 AM To: Jeff Glickman Cc: John Clauss Subject: ROV video review

Jeff,

In talking recently to John Clauss I learned for the first time (my bad) that we have much more underwater video than I thought we have. Like you, I have been focusing on the HD imagery provided via Mark Smith. John also has a set of that imagery.

However, the ROV was equipped with TWO cameras - a standard definition camera that was linked into the ROV navigation/tracking system and a separate High-Def camera. The standard definition image is wide-angle and includes metadata. The HD image is a "clean" screen (no metadata) and has better resolution for broadcast but covers a smaller area. For much of the expedition the HD camera was inoperative due to fiberoptic cable problems but the standard def was still recording. The ROV was in the water on 12 days of the 21-day expedition. We have HD footage for 5 of those days of which one day was only test dives. In other words, the HD footage is only a fraction of the total imagery acquired.

As John has pointed out, most ROV visual searching is carried out using standard def. HD is an unusual luxury. Obviously, we need to carefully examine all of the underwater imagery. I suggest that you and I and John Clauss comprise an ad hoc working group to look at

EXHIBIT
5

what we have. You have the necessary forensic imaging expertise and experience; John is familiar with aircraft components and was there when the imagery was acquired; and I can provide specific information about Electra components.

Although I didn't realize it until last week, I have all of the standard def imagery on a set of three DVDs provided by Seabotix. It's in a program called SeaPro that is included with the imagery. Tomorrow I'll snail-mail copies of the DVDs to each of you. Each set contains three DVDs:

ROV 1 - files for May 25, 26, 27 & 28

ROV 2 - files for May 29 & 30, June 1 & 6 ROV 3 - files for June 7, 8 & 9

There's a bit of a learning curve to using SeaPro and it only runs on a PC. I have to run it via Parallels on my Mac which is a pain in the ass. The HD files we all have from Mark are not labeled with the date acquired so we'll have to match them up with the standard def imagery to know when and where they were shot.

SeaPro is the tracking system Seabotix used to operate the ROV. It provides lat/long information for the location of the ROV by calculating the vehicle's position relative to the GPS position of the mother ship. In theory, SeaPro tells us where in space (lat/long and depth) the video image on the screen was acquired. However, in comparing the one "ground truth" position mapped by Seabotix (the prop shaft of Norwich City), I discovered that the location was off by about 150 meters to the southeast. The manufacturer has since acknowledged that there is a flaw in the system but they haven't yet determined whether the error is constant or varying. For us, it means that if we see something interesting in the video we'll know the depth but we won't be able to pinpoint the location. However, by carefully correlating the video clip with the daily field notes we should be able to closely define the area where the ROV was that day.

I'm currently preparing a detailed day-by-day breakdown, including overhead and depth profile maps, showing where the ROV was working. I should be able to send that to you and John in the next day

or so.

Ric

From: Jeff Glickman <jeff@glickman.com>
Subject: RE: Video Processing Idea
Date: December 23, 2010 1:49:57 AM EST
To: 'Ric Gillespie' <tigharic@me.com>

Thanks Ric. Possibly. Can you fill me in on the background? -Jeff

From: Ric Gillespie [mailto:tigharic@me.com] **Sent:** Wednesday, December 22, 2010 7:03 PM
To: Jeff Glickman **Subject:** Fwd: Video Processing Idea

Jeff,

Is this of any interest to you?

Ric

Begin forwarded message:

From: Ric Gillespie <tigharic@mac.com>
Date: December 22, 2010 10:01:14 PM EST
To: mark petersen <petersen.mc@gmail.com>
Subject: Re: Video Processing Idea

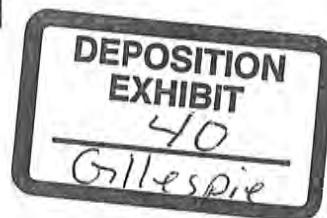
Mark,

I'll run this by Jeff and see what he thinks.

Ric

EXHIBIT 6

From: epac_gis <yahoogroups@select-gis-services.com>
Subject: [EarhartPAC] Re: Research needed
Date: April 27, 2011 11:33:39 AM EDT
To: EarhartPAC@yahoogroups.com
Reply-To: EarhartPAC@yahoogroups.com



Ric, What is the possibility that that any of these materials are related to the lost sonar "fish"? jim James Thompson Select GIS Services Post Office Box 395 Northampton, MA 01061-0395 --- In EarhartPAC@yahoogroups.com, Ric Gillespie <tigharic@...> wrote: > >

> > I have seen the video of the rope and it is something that would warrant the full brunt of Tighar curiosity . > > It's not just the rope. It's the rope in the same vicinity as the rods just offshore the Nessie location. When the coincidences start piling up you begin to wonder if the whole may be greater than the sum of its parts. > > > There are numerous other possibilities for the source of the rope, > > Been thinking about that. > Here's a question. Did the colonists fish in the ocean and, if so, how? Hooks and lines? Nets? Standing on the edge of the reef at low tide? From a boat or canoe? > > I also know of no mention of the colonists fishing with nets. I don't think we've seen any old nets or net floats in the village. We do see abundant evidence that sheet aluminum was being cut into small rectangles - presumably for use as lures on fishing lines. > > We have photos of canoes but always in the lagoon. They had a "surf boat" for bringing supplies ashore from ships, but getting back and forth over the reef before the landing channel was made was no joke. It may be there was little-to-no fishing from boats in the ocean - which would explain the paucity of man-made objects at the depths that have been searched so far. > > Ric > > > > On Apr 27, 2011, at 9:26 AM, Mark Smith wrote: > > > > The point about the tie down system is that it would likely be a part of the aircraft travel kit in general because there would likely be a need to tie it down at various way points of the WF attempt. Using the tie down kit on the reef at niku would be futile, a fools errand, etc. That reef is like a slab of concrete . > > > Perhaps they could have tied the plane off to some coral slabs, but ultimately the ropes tie downs are meant to restrain the aircraft against surface winds not surface tides.

> > > I have seen the video of the rope and it is something that would warrant the full brunt of Tighar curiosity . The diameter of the rope seems like the wrong size for a ship like Norwich City because it's rather light weight. There are numerous other possibilities for the source of the rope, and in any case it would be interesting to see where the rest of the rope leads to. > > > On Apr 27, 2011, at 7:15, "Joe Cerniglia" <joecerniglia@...> wrote: > > > > >



>> If the theory about it is as simple and direct as that it really IS part of an aircraft mooring kit, and not some Norwich City flotsam, this would seem significant, and credible from the standpoint of what you would do to save your plane. The aircraft drags the lashing, mooring rods and anchor pins as it slides down the slope, eventually pulling free of them. The apparatus remains at the top of the slope. >>> Can you find the rope again and retrieve it when you go back? Would you then follow after the area in which it seems to point? >>>

>>> If that's what it is, how effective do you think this type of kit would be in holding down an Electra in the Niku surf? >>> >>> What's the plan for disposition of the aircraft if you do find it or a reasonably sized chunk? Does it stay at depths exactly as is or does it get salvaged in whole or in part for historical interest and possible preservation? How might it be protected from poachers? >>> >>> Joe >>> >>> --- In EarhartPAC@yahoogroups.com, Ric Gillespie <tigharic@> wrote: >>> >>> Great stuff Rick (as usual). >>> >>> I now understand how the "arrows" work. Same principle as some types of a "molly" you use in drywall. >>> In the U.S. Navy kit pictured, it looks like the "mooring rods" are threaded on each end. I guess you attach a "mooring rod" to an "arrow" and use the "driving rod" to drive it into the ground. You then screw a metal "eye" onto the end of the "mooring rod" and tie your rope to it. >>> I think the rope in the Navy kit is heavier than "our" rope but the rods seem to be of similar diameter. >>> >>> In the modern kit on eBay the cable loops over the "arrow" and you drive the "arrow" into the ground with a "driving rod." >>> >>> I've put a video of the rope up on YouTube at <http://www.youtube.com/watch?v=8yjeyOTFWX0> >>> >>> Ric >>> >>> >>> >>> On Apr 26, 2011, at 7:35 PM, RickerJ wrote: >>> >>> Two mooring kit photos: >>> >>> http://www.bellsaviation.com/mm5/merchant.mvc?Screen=PROD&Store_Code=BA&Product_Code=20037&Category_Code=MISC >>> >>> <http://www.banaire.com/wheelchocks.html> >>> >>> >>> --- In EarhartPAC@yahoogroups.com, "Ricker Jones" <rjones@> wrote: >>> >>> >>> Pictures of this "heavy duty" anchor show the "arrow" concept, with driving >>> >>> rod, but using cables instead of mooring rods. (see instructions page with >>> >>> photos). >>> >>> >>> >>> <http://cgi.ebay.com/4-Ground-Anchor-HEAVY-DUTY-Tie-Down-Kit-Complete-/260471> >>> >>> 095075?pt=LH_DefaultDomain_0 >>> >>> <<http://cgi.ebay.com/4-Ground-Anchor-HEAVY-DUTY-Tie-Down-Kit-Complete-/26047>>>> >>> >>> 1095075?pt=LH_DefaultDomain_0&hash=item3ca5497f23>&hash=item3ca5497f23 >>> >>> >>> >>> >>> >>> >>>

A 1976 Lockheed publication describes this mooring kit: > >> > >> > >> >>>
> >> > >> >>> "Mooring with Kit > >> >>> >>>>>
There is a portable kit for mooring "off pavement". > >> >>> >>>>>
Enough kits are needed to tie down the airplane at 12 > >> >>> >>>>>
points. Each kit contains anchor rods, arrows, and a > >> >>> >>>>>
driving rod for sinking the anchors into the ground. Use > >> >>> >>>>>
> 9/16-inch or larger manila rope. Leave 12 inches of slack > >> >>> >>>
> > in each wing tiedown but make the nose and tail > >> >>> >>>>>
tiedowns snug" > >> >>> >>>>>
http://www.lockheedmartin.com/data/assets/service_news_magazines/V3N3.pdf > >> >>> >>>>> >>>>> >>> >>> >>> >>>

[Reply to sender](#) | [Reply to group](#) | [Reply via web post](#) | [Start a New Topic](#)
[Messages in this topic \(11\)](#)

RECENT ACTIVITY:

Visit Your Group

Switch to: Text-Only, Daily Digest • Unsubscribe • Terms of Use

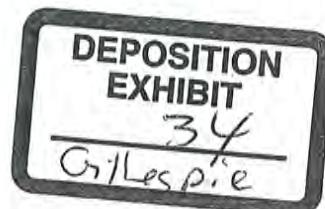
EXHIBIT 7

"reply" to the sender indicating your wishes. In the U.S.:
19405
148th Ave NE, Woodinville, WA 98072.

-----Original Message-----

From: Ric Gillespie [mailto:tigharic@me.com]
Sent: Monday, April 04, 2011 8:15 AM
To: Jeff Glickman
Subject: Strategy

Jeff,



After discussing your findings with the TIGHAR board, the consensus is that news like this is so good that it could prompt some hotshot millionaire glory hunter to decide to beat us to the "treasure." As you and I discussed, it's probably best to hold these results close and use them as a "closer" in private fund-raising. Right now only Bob Brandenburg and the board know what you've told me. We're going to keep it that way for the moment.

Question for you:

How do you go about getting independent validation of forensic



imaging
work?

I would think that someone with professional qualifications like

yours could look at the work you've done to determine location,

dimensions, physical characteristics, etc. and say, yes, those

properties are discernible from this image, but at some point

interpretation comes into the picture and that can vary from individual to individual.

Once you have your report written, how would you suggest we proceed

in

getting it peer reviewed?

Ric

From: Jeff Glickman <jeff@glickman.com>
Subject: RE: Lockheed assembly #
Date: April 1, 2011 6:00:06 PM EDT
To: 'Ric Gillespie' <tigharic@mac.com>

Thank you Ric -- this is most helpful.

EXHIBIT 8

AGREEMENT

Regarding items recovered from
Nikumaroro, Republic of Kiribati,
by TIGHAR's Earhart Project, September-
October, 1989

I. The items recovered from
Nikumaroro that are the
subject of this agreement are
those described in the attached
"Catalogue." No other items of
historical interest have been
recovered or removed by
TIGHAR or its Project Participants.

II. TIGHAR may remove any and
all of the items identified in
the attached "Catalogue" from
Kiribati and transport same
to the United States of America
or to other countries for
purposes of analysis, preparation
of reports, and public education
or display, subject to the
following provisions:



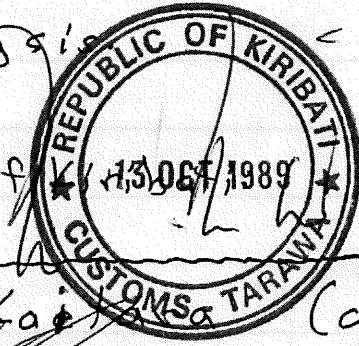
(A) Those items assigned the numbers Z-1, Z-2, Z-3, Z-4, Z-5, Z-6, Z-15, Z-16, Z-18, and Z-19 will be analyzed by TIGHAR to determine whether they are or may be associated with the disappearance of Amelia Earhart and Fred Noonan in 1937. If TIGHAR determines that any of the subject items is or may be associated with such disappearance, TIGHAR will either preserve such item in perpetuity or arrange for its donation, on behalf of the Republic of Kiribati, to an appropriate museum or other curatorial institution that will so preserve it. If TIGHAR determines that any of the subject items are not associated with such disappearance, TIGHAR may either retain such item or discard it.

(B) Those items assigned the numbers Z-7, Z-8, Z-9, Z-10, Z-11, Z-12, Z-13, Z-14 and Z-17 will be analyzed

by TIGHAR with reference both to their possible relationship (if any) to the Earhart/Noonan disappearance and to their relationship to other aspects of Nikumaroro's history. Upon completion of analysis, but not later than 1 January, 1991, TIGHAR will place all these items in an appropriate museum or other curatorial institution for ~~permanence~~ preservation in perpetuity with the explicit, written understanding that the Republic of Kiribati may at any time regain any and all such items for purposes of study, analysis, display, and/or public education, and ~~provided~~

(c) Provided that notwithstanding Paragraph II(B), TIGHAR may discard items Z-11 and Z-12 (highly oxidised ferrous metal objects) upon completion of analysis.

Executed: For the Republic of



13/06/1989

Mo. K. Kai (date)

For TIGHAR:

TIGHAR (date)

TIGHAR (date)

ARTIFACT CATALOGUE
Earhart Project, Phase 2

TIGHAR Accession #: 02

#	Description	Provenience
2-1	Aluminum box, reinforced; possibly painted w/zinc chromate. Cut and opened out, presumably for use as roof patch, etc. One reinforcement bar bears #28F4023-4; other is partly covered by flange but appears identical.	House site near Gardner Co-op Store. See RG & TK notes for sketch-map.
2-2	Piece of sheet aluminum w/possible traces red paint. One edge clean; others roughly cut.	Ritidian site "NT"; see TK notes for detailed sketch-map.
2-3	Aluminum strip, perforated. Cut through perforations.	Store area. Transect "F", 10M away from metal pit and 4M away from TIGHAR-00005 aluminum sheet "piano."

Catalogue p. 2
Acc. # 02

2-4	Aluminum-faced insulated plate w/ electrical connections. Radio part?	Ritrat's, New Village; Transect 20, Site 21, 10/4/89.
2-5	Small aluminum plate or strap fragment w/punched hole.	Immediately adjacent to item 2-4
2-6	Fiberboard plate with holes, 7 electrical (?) connections, printed numbers "R175; V1(?)13; R174."	Immediately adjacent to associated with items 2-4 & 2-5 (Note: The remains of what appeared to be an electrical coil were also in this location, not collected.)

Catalogue p. 3
Dec. # 02

2-7	Cigarette lighter	Beach SE of monument. See RG notes for detail
2-8	Table knife	13
2-9	Flat metal cigarette(?) box w/map of Hawaiian Islands on lid.	Rititati New Village Transect "N". 30°N toward ocean from road. 10/4/89.
2-10	Table knife blade, stainless steel.	Rititati site "NT." J.Krakow 10/4/89
2-11	Ferrous pin. (Note: Cat. #s 2-11 & 2-12 not on items; on slip in bag.)	Hit #1, Feature 1, Nuziran Mudflat. See TK mapping notes.
2-12	Ferrous tube(?) flattened & bent around another metal object	Hit #2, Feature , Nuziran Mudflat. Is above.

Catalogue p. 4
Acc. # 02

2-13	Basalt adze bit. frag.	Picked up 10/1/89 by J. Krakow on trail, 10 M. from NW. Corner Monument, bearing 200°
2-14	Basalt core	Picked up 10/4/89 by J. Krakow on trail, ca. 5M SW of opening onto beach.
2-15	Battery	Taziman Passage, 8-10M out from shore, West of wireless site, NE of site "NT."
2-16	Battery	22.2M depth off Ritrat/Taziman reef flat. Bearing 305° to engine <u>Norwich City</u> , 27° to Point Jessica, 100' to landing monument.

Catalogue p. 5
Acc. # 02

2-17	Ferrous adze bit, badly oxidized, exfoliating. Reassembled & stabilized with dilute Elmers Glue - Bill 10/11/89	Ritiat, New Village, New Nanabia Site. See TK notes for detail
2-18	Aluminum plate with riveted bands on edges; part of box?	Karako Village, Ritiat, structure 17 (Carpenter's shop?) See TK notes for map.
2-19	Quadrilateral cross-section rod.	Beach at water's edge off Ritiat; site "NT." 10/5/89 Bill Decker photos 9, 10, 11, 12.

Loaned to Tom King for
analysis & description
10/14/89

Z-11 } Nuzivan Mudflat
Z-12 } Features, Hits 1 & 2

Z-13 - Basalt adze bit

Z-14 - Basalt core

Z-17 - Ferrrous adze bit

EXHIBIT 9

Tessie Eria Lambourne
Secretary

On 26 April 2011 07:10, Ric Gillespie <tigharic@me.com> wrote:

Dear Mrs. Lambourne,

When might I expect a reply to this request?

Respectfully,
Ric

Ric Gillespie
Executive Director
TIGHAR
www.tighar.org
tigharic@mac.com



Begin forwarded message:

> From: Ric Gillespie <tigharic@mac.com>
> Date: April 11, 2011 2:06:20 PM EDT
> To: Tessie Lambourne <tlambourne@mfa.gov.ki>
> Cc: Birati Titon <birati.titon@ob.gov.ki>, Tukabu Teroroko <tukabutravel@yahoo.com>, Bill Carter <carter@dean-carterlaw.com>, Richard K Pruett <PruettRK@state.gov>
> Subject: Meeting request
>
> Dear Mrs. Lambourne,
>



> As I'm sure you know, for more than twenty years The International Group for Historic Aircraft Recovery (TIGHAR) has been testing the hypothesis that the final flight of famous American aviator Amelia Earhart ended at Nikumaroro. Ten expeditions, always with the support and participation of the Government of Kiribati, have found strong evidence, but as yet no conclusive proof, that the hypothesis is correct.

>

> It is our hope to return to Nikumaroro in 2012 with technology that will enable us to do a detailed search for the wreckage of Earhart's airplane in the waters surrounding the island. I'm sure you will agree that, should the search be successful, it would be wise for there to be a plan in place for what to do next.

>

> I plan to visit Tarawa in early June to present the report on our 2010 expedition to Mr. Tukabu Teroroko and the PIPA Committee. Accompanying me will be a member of TIGHAR's board of directors, Mr. William Carter Esq. and, schedules permitting, Mr. Richard K. Pruett, Deputy Chief of Mission for Kiribati, U.S. Embassy, Fiji. The U.S. Embassy has a particular interest in our investigation as "an American citizen welfare and whereabouts cold case." During our upcoming visit we would very much appreciate the opportunity to meet with you and other Kiribati Government officials as may be appropriate to work out an agreement that will protect the interests of all parties if and when the wreckage of the plane is discovered.

>

> There is a popular perception in the U.S. and elsewhere that the recovered wreckage of the Earhart airplane would have great monetary value. The stronger the evidence becomes that the wreckage of the plane is in the waters adjacent to Nikumaroro, the greater the danger of an unauthorized attempt to find and recover it. An amateur search could do significant damage to the reef and recovery of the aircraft's aluminum structures without special precautions would almost certainly result in their destruction through the rapid onset of catastrophic corrosion. A pirate recovery would also result in a festival of litigation and would bring negative, rather than positive, publicity to the Phoenix Islands Protected Area and Kiribati.

>

> We are starting from the assumption that if the wreckage is in Kiribati waters it belongs to Kiribati. Just as the New England Aquarium provides vital expertise in managing the coral reefs of the Phoenix Group, it is clearly in Kiribati's best interest for TIGHAR to continue to provide the specialized services needed to manage cultural resources relating to Amelia Earhart. Our vision is for the aircraft, when found, to be recovered and conserved using state-of-the-art scientific techniques. A traveling exhibit of the conserved aircraft and Earhart-related artifacts could then tour major museums. Such a traveling exhibit could generate income for Kiribati and TIGHAR before the aircraft and artifacts were ultimately presented to the Smithsonian Institution in Washington DC as a gift from the people of Kiribati to the people of the United States.

>

> As Mr. Pruett has pointed out, this plan is consistent with
the Treaty of Friendship and Territorial Sovereignty,
signed at Tarawa

> between the United States and the Republic of Kiribati
September 20, 1979, which references "Gardner
(Nikumaroro)" in its Preamble and states in Article 5:

> "The Governments of the United States and Kiribati will
use their best efforts to encourage cooperation between
the two countries in protecting the unique natural and
cultural resources of Kiribati, and, for their mutual benefit,
to encourage and facilitate scientific research activities
and cultural exchanges."

>

> It is our desire to discuss, refine and reach agreement
on these matters ahead of a discovery rather than have to
react to a crisis after the wreckage is found. If you would
favor us with a date in early June when it would be
convenient to meet with us we will plan our visit
accordingly.

>

> Sincerely,

> Ric

>

>

> Ric Gillespie

> Executive Director

> TIGHAR

> www.tighar.org

> tigharic@mac.com

>

> author of

- > "Finding Amelia - The True Story of the Earhart Disappearance"
- > Published by the Naval Institute Press, Annapolis, MD
- >
- >
- >
- >
- >
- >

EXHIBIT 10



One Discovery Place
Silver Spring, MD 20910-3354

DEPOSITION

EXHIBIT

28
Gillespie

APPROVED BY LEGAL

EXCLUSIVE
EXPEDITION AGREEMENT

This Exclusive Expedition Agreement ("this Agreement"), dated April 12, 2010 is entered into by and between, on the one hand, **DISCOVERY COMMUNICATIONS LLC** ("DCL"), located at One Discovery Place, Silver Spring, Maryland 20901, and on the other hand, **THE INTERNATIONAL GROUP FOR HISTORIC AIRCRAFT RECOVERY**, located at 2812 Fawkes Drive, Wilmington, Delaware 19808 ("TIGHAR") and **RICHARD E. GILLESPIE**, located at 2812 Fawkes Drive, Wilmington, Delaware 19808 ("Gillespie"), with reference to the following facts:

A. TIGHAR is a 501(c)(3) non-profit aviation historical foundation. TIGHAR's Earhart Project is devoted to solving the mystery of the disappearance of Amelia Earhart and Fred Noonan through historical research, archaeological investigation, artifact recovery and scientific analysis ("Earhart Mystery").

B. TIGHAR is testing the hypothesis that Earhart's plane landed on or near the Pacific island of Nikumaroro ("Niku") in the Phoenix Group and TIGHAR has traveled to Niku eight times and to Kanton Island once over the last 20 years in search of Earhart Mystery evidence ("Past Expeditions") and, in connection with the Past Expeditions, has created, developed and/or produced (either directly or through a third party) film and video footage and other recordings ("Past Expedition Footage") and related research materials ("Past Expedition Research Materials" and together with the Past Expedition Footage, the "Past Expedition Materials").

C. TIGHAR has chartered two expedition vessels. A primary ship will return to Niku in May 2010 with an archaeological team equipped to continue the onshore search for artifacts and remains related to the Earhart Mystery. The ship will be equipped with a remote operated vehicle ("ROV") to search for underwater artifacts related to the Earhart Mystery (specifically airplane wreckage). A secondary ship will join the expedition in June with additional personnel. The purpose of the Expedition is to continue the search for evidence that will solve the Earhart Mystery. Travel on both ships and TIGHAR's effort to solve the Earhart Mystery in the May 2010 voyage is referred to herein as the "Expedition." The Expedition Participants are listed on Exhibit A, attached hereto.

D. On its 2007 expedition to Niku, TIGHAR recovered material that may be dried human feces ("Island Material"). Molecular World, Inc. (now Warnex Pro-DNA Services, Inc.) a DNA laboratory in Thunder Bay, Ontario (hereby referred to as "The Lab"), tested the DNA of the Island Material, with inconclusive results. TIGHAR wishes to continue DNA testing the Island Material under the supervision of Dr. Ryan Parr, a well-credentialed forensic scientist, against an mtDNA sample donated by an Earhart family member. ("DNA Testing").

April 15, 2010
Finding Amelia

1

Network: DSC
Contract ID# 1034438
Discovery Channel • TLC • Animal Planet • The Science Channel • Discovery Health Channel • Planet Green • Discovery Kids
Military Channel • Discovery Times Channel • Discovery HD Theater • FitTV • Discovery Home Channel
Discovery Kids en Español • Travel Channel • BBC America • BBC World • Discovery Civilization Channel • Discovery Travel & Living • Discovery Home & Health • Discovery Real Time • Discovery Real Time Extra • Discovery Turbo • Discoverystore.com • Discovery.com • Cosmeo • unitedstreaming • Discovery Assignment Discovery • Discoveryschool.com

EXHIBIT

10

E. DCL wishes to have exclusive rights to produce or have produced television programming about the Expedition and TIGHAR's efforts to solve the Earhart Mystery, which may feature TIGHAR, the Expedition Participants, the Expedition and Gillespie; exclusive rights to publish results of the DNA Testing and the Expedition ("Publication Rights"); and use of Past Expedition Materials as set forth herein.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are acknowledged, DCL, Gillespie and TIGHAR hereby agree as follows:

(1) DCL Fee: As consideration for the performance of Gillespie's and TIGHAR's obligations hereunder and the grant of rights herein, DCL agrees to pay TIGHAR the following fee ("DCL Fee"): (a) a flat fee of USD \$475,000; and (b) the actual out-of-pocket costs incurred by TIGHAR for the DNA Testing, up to a maximum of USD \$25,000. The pay schedule shall be as follows:

- A. Within 20 days following DCL's receipt of full and complete execution of this Agreement and an invoice from the laboratory performing the DNA Testing, the actual out-of-pocket costs of the DNA Testing up to Twenty Five Thousand United States Dollars (USD \$25,000);
- B. Within 20 days following DCL's receipt of this Agreement executed by TIGHAR as well as the release agreements (Exhibit A-1) and Non-Disclosure Agreements (Exhibits B-1 and B-2) from Gillespie and all Expedition participants identified in Exhibit A (except boat crew and Takirua Tabuu, which may be obtained at a later date) which are acceptable to DCL, Two Hundred Thirty Five Thousand United States Dollars (USD \$235,000);
- C. Within 20 days following Expedition completion and delivery to DCL of all footage from the Expedition, which, if shot by Mark Smith of Oh Seven Films, DCL must approve as compliant with the attached DCL technical specifications ("Tech Spec Satisfaction") as referenced in this paragraph below, One Hundred Fifty Thousand United States Dollars (USD \$150,000);
- D. Within 20 days following delivery to and approval by DCL of a rough cut of the Program, Forty-Five Thousand United States Dollars (USD \$45,000); and
- E. Within 20 days following delivery to and approval by DCL of the master version of the Program, Forty-Five Thousand United States Dollars (USD \$45,000).

For clarity, if Oh Seven Films has not delivered Expedition Footage in accordance with paragraphs 1.0, 1.2.2, 1.2.9, 1.2.10, 2, 2.2, 2.3, and 3 of the attached DCL technical specifications at Exhibit B then DCL shall not be obligated to pay TIGHAR the fees specified in C, D, and E above. TIGHAR understands that in the event that, for any reason, DCL, in its discretion, elects to release a portion of the Fee set forth in C, D, or E above prior to its indication of Tech Spec Satisfaction, such payment shall not be deemed a waiver of this provision, and if the technical specifications stated above are not

satisfied, DCL has the right to terminate this Agreement by written notice to TIGHAR, and TIGHAR shall reimburse DCL for payments from fees specified in C, D, and E above as of the date of such termination.

- (2) **DCL RIGHTS.** In consideration for the Fee as set forth in Paragraph 1, TIGHAR and Gillespie hereby agree as follows:

A. DNA Test of the Island Material. TIGHAR shall engage The Lab or another laboratory certified and credentialed in molecular biology to initiate DNA Testing as soon as possible following execution of this Agreement. TIGHAR will deliver the results of the DNA Testing to DCL as soon as possible without compromising the scientific integrity of the tests, and shall deliver monthly written reports to DCL on the progress of such testing. The DNA Testing shall be subject to the provisions of Section (2)F below.

B. Exclusive Program Rights and Film Footage.

1. For a period of two (2) years from the date hereof ("Media Rights Exclusivity Period"), TIGHAR and Gillespie hereby each grant DCL exclusive and worldwide rights to make programming intended for initial exhibition on television about TIGHAR, Gillespie, the DNA Testing, Past Expeditions and the Expedition, preparation thereof and the results and conclusions drawn from the Expedition, Past Expeditions and the DNA Testing (collectively, the "Program"). (For clarity, DCL agrees that it shall not produce or have produced more than two hours of the aforementioned programming.) The parties acknowledge and agree that DCL and its successors, licensees and assigns shall be the sole and exclusive owner of the Program (including all copyrights and renewals and extensions thereof), with the exclusive right for the full period of copyright, including all extensions and renewals thereof, and thereafter in perpetuity, throughout the universe, to use and re-use, an unlimited number of times, all or any part of the Program for the purpose of making and producing television programs and other works, and advertising, publicizing and exploiting the same, by all means and in all media, whether now known or hereafter devised, and to authorize others so to do. Neither TIGHAR nor Gillespie shall have any right of action against DCL or any other party arising out of any use of the Program.

For the avoidance of doubt and without limiting the foregoing, during the Media Rights Exclusivity Period, neither TIGHAR nor Gillespie shall itself distribute, promote, exhibit or otherwise exploit, nor authorize any party (other than DCL and its successors, licensees and assigns), to distribute, promote, exhibit or otherwise exploit, in any media anywhere in the world, any programming about the DNA Testing, the Expedition, or Past Expeditions, the preparation thereof or the results and conclusions drawn from the Expedition, Past Expeditions and/or DNA Testing unless otherwise agreed to herein or by the parties in writing.

2. TIGHAR and Gillespie hereby grant DCL, its successors, representatives, licensees and assigns all rights to the film footage of the Expedition filmed by Mark Smith of Oh Seven Films ("Expedition Footage") and acknowledge and agree that DCL and its successors, licensees and assigns shall be the sole and exclusive owner of the Expedition Footage (including all copyrights and renewals and extensions thereof), with the exclusive right for the full period of copyright, including all extensions and renewals thereof, and thereafter in perpetuity, throughout the universe, to use and re-use, an unlimited number of times by all means and in all media, whether now known or hereafter devised, and to authorize others to do so.
3. Without limiting the foregoing, DCL hereby agrees to license TIGHAR the right to exploit the Expedition Footage as follows:
 - a. ten (10) minutes for exploitation on its website with DCL's approval, such approval not to be unreasonably withheld, located at www.TIGHAR.org following the DCL premier of the Program;
 - b. five (5) minutes of bona fide news coverage of the Expedition or TIGHAR, provided that during the Media Rights Exclusivity Period (i) TIGHAR shall coordinate distribution of such footage with DCL and, if DCL requests, such footage shall have the DCL logo on it; and (ii) such news coverage shall not be broadcast on National Geographic Channel, A&E, The History Channel, Tru TV, Spike TV, HBO and Showtime;
 - c. five (5) minutes as part of research or scientific materials to be used by TIGHAR or Gillespie before the premier of the Program provided that it shall not be exploited in any media, including television, publishing or the internet;
 - d. as part of research or scientific materials to be used by TIGHAR or Gillespie following the DCL premier of the Program provided that it shall not be exploited in any media, including television, publishing or the internet except as provided herein. For clarity, publishing findings on TIGHAR's website at www.TIGHAR.org ("TIGHAR Website") and discussing the same with subject matter experts and TIGHAR members shall not be deemed "exploitation" so long as such exploitation does not include the publication of film footage;
 - e. five (5) years following the DCL premier, TIGHAR shall be allowed to sub-license up to three (3) minutes of Expedition Footage for exploitation on broadcast television; and
 - f. any other exploitation uses that DCL shall approve in writing.

DCL shall deliver within twenty (20) days of receipt of the Expedition Footage a copy of the Expedition Footage to TIGHAR for purposes of exercising its rights hereunder at TIGHAR's sole cost and expense.

4. DCL's First Right of Negotiation and Last Refusal

a. For three (3) years following the Media Rights Exclusivity Period ("First Negotiation Period"), if TIGHAR desires to mount another expedition related to solving the Earhart Mystery, then TIGHAR shall give DCL written notice of such desire. Commencing on DCL's receipt of such notice there shall be a sixty (60) day period during which DCL, on the one hand, and TIGHAR and Gillespie, on the other hand, ("Negotiation Period") shall negotiate in good faith for DCL to acquire exclusive rights to produce, distribute, exhibit, promote and/or otherwise exploit any media programming about such expedition ("Offered Rights"). If by the end of the Negotiation Period no agreement has been reached, then TIGHAR may solicit offers with third parties with respect to the Offered Rights provided that DCL has the last right of refusal as follows: If TIGHAR receives a bona fide offer from a third party that TIGHAR proposes to accept then TIGHAR shall give written notice to DCL of such offer specifying the particulars thereof, including any Offered Rights that are the subject of such offer, the name and address of the offeror, the proposed financial terms, and all other material terms of such offer. During the period of ten (10) business days after receipt of said notice (the "Reconsideration Period"), DCL shall have the exclusive option to acquire the particular rights referred to in such offer, upon the same financial terms and other terms set forth in such notice ("DCL's Purchase Option").

b. If DCL elects to exercise DCL's Purchase Option, DCL shall notify TIGHAR of the exercise thereof within the Reconsideration Period; DCL and TIGHAR shall then promptly execute written agreements conveying to DCL such Offered Right(s). If DCL does not elect to exercise DCL's Purchase Option, TIGHAR shall be free to accept said bona fide offer (but only upon the terms and conditions specified in such bona fide offer); provided, however, if any such proposed offer is not confirmed in writing within forty five (45) days following the expiration of the Reconsideration Period, DCL's Purchase Option shall revive and shall apply to such proposed offer again and to each and every further offer or offers at any time received by TIGHAR relating to the particular Offered Right(s). DCL's Purchase Option shall continue in full force and effect, upon all of the terms and conditions of this paragraph 4, so long as TIGHAR retains any right, title, or interest in or to the particular Offered Right(s).

C. Exclusive Access to Expedition.

1. TIGHAR represents and warrants to DCL that pursuant to an agreement dated August 2, 2009 between Oh Seven Films ("07") and TIGHAR ("07 Agreement"), TIGHAR has previously granted to 07 exclusive rights to film and photograph the

Expedition on a work-made-for-hire basis and rights establishing 07 as a producer of a program about the Expedition.

2. Upon reliance of TIGHAR's representation that the 07 Agreement grants 07 exclusive rights to film and photograph the Expedition, DCL, its representative, licensee or assign, agrees to enter into a production agreement with 07 for the right to film the Expedition.
3. TIGHAR and Gillespie further represent and warrant the following with respect to the Expedition:
 - a. TIGHAR hereby grants to 07 and DCL, at no additional cost to 07 or DCL, use of TIGHAR vessels and all necessary personnel, facilities and supporting equipment, meals and lodging for Mark Smith of 07 and storage of his equipment and gear aboard the TIGHAR vessel during the Expedition and Mark Smith will film and photograph the Expedition;
 - b. TIGHAR has granted to 07 the exclusive right for media broadcast purposes to photograph, film and record the work of TIGHAR personnel, and the Expedition participants, including conducting interviews with TIGHAR personnel, Gillespie, Expedition Participants, and the right to place fixed cameras on TIGHAR-chartered vessels to capture action and work of all Expedition Participants as it occurs. Notwithstanding the foregoing, the parties acknowledge that Expedition Participants may photograph, film and record the work of the Expedition for their personal use. Such materials shall be the exclusive property of TIGHAR available to DCL for use in the Program and may not otherwise be exploited in any media (television or internet) during the Media Rights Exclusivity Period except that Expedition Participants may post personal photographs from the Expedition on social networking sites such as Facebook after the premier of the Program. For clarification, none of the Expedition Participants are professional photographers or videographers, are media professionals or employed by media companies;
 - c. TIGHAR shall use best efforts to assist 07 and/or DCL, its representatives, licensees or assigns, in obtaining all appearance releases, location agreements and other consents or releases of, or licenses from, third parties in form and substance satisfactory to DCL, which form is attached in Exhibit A-1 and which includes a risk waiver and release, that DCL may reasonably request in connection with: (A) the appearance of anyone whom 07 and DCL may desire to depict in the Program (including but not limited to all Expedition participants, TIGHAR agents, representatives, subject matter experts, employees and contractors); and/or (B) the use of materials and/or locations which TIGHAR or DCL desires to utilize in or in connection with the Expedition, the Program or its promotion.

- d. TIGHAR shall use good faith efforts to assist DCL, at its election and if possible, in securing a spot for a DCL representative (e.g., producer) on any second vessel that will travel to Niku as part of the Expedition.
- D. Past Expedition Film License, Access to Research Materials and ROV Footage License. During the Media Rights Exclusivity Period, TIGHAR and Gillespie hereby grant to DCL, its representatives, licensees and assigns, the non-exclusive right to exhibit, market, sublicense, distribute, transmit, perform and otherwise exploit the Past Expedition Materials in any and all media (now known or hereafter invented), worldwide in the Program, its publicity, advertisements and promotion. DCL agrees and acknowledges that some of the Past Expedition Materials may not meet DCL's technical specifications referenced in Paragraph 1 of this Agreement. During the Media Rights Exclusivity Period, TIGHAR and Gillespie hereby grant to DCL, its representatives, licensees and assigns, the exclusive right to exhibit, market, sublicense, distribute, transmit, perform and otherwise exploit the film captured by the ROV in any and all media (now known or hereafter invented), worldwide in the Program, its publicity, advertisements and promotion and with the DCL logo or bug on it, except that if the film captured by the ROV does not include images of "Conclusive Discoveries" then the forgoing license of the ROV film footage shall be non-exclusive. With respect to ROV film footage of Conclusive Discoveries, after the announcement of the Conclusive Discovery described in paragraph F below, TIGHAR shall have the right to utilize and publish up to five (5) still photographs on the TIGHAR Website and in the TIGHAR newsletter provided that DCL's SVP of Communications approve the photos to be used and determine whether a DCL bug or logo should be inserted on such photo(s) for publication.
- E. Gillespie Services. Gillespie shall execute the attached personal appearance release and Non-Disclosure Agreement (the "Gillespie Agreements"), and serve as a primary consultant to DCL, 07 and its production staff. During the Media Exclusivity Period, Gillespie shall, subject to reasonable availability, render services as on-camera and off camera expert, and he shall cooperate with DCL in such manner as DCL deems necessary or desirable for the purpose of producing, advertising, promoting, publicizing or otherwise exploiting the Program, DCL or sponsor of the Program including appearances, appearances at press and media events; print, radio and television interviews; satellite media tours; on-camera and off-camera promotions; still photography sessions; online activities; columns and notes from the field; autograph sessions; and making any public or personal appearances as may be requested by DCL without additional compensation except that any travel expenses associated with the foregoing shall be reimbursed to Gillespie by DCL at cost and incurred only in accordance with DCL's travel policy, i.e: costs must be pre-approved in writing by DCL.

F. Exclusive Right to Announce/Confidentiality. During the Exclusive Media Rights Period, the parties agree that DCL shall have the exclusive right to announce and publicize a Conclusive Discovery, defined below in paragraph F(1)(i). In good faith consultation with TIGHAR and Gillespie, DCL shall endeavor to make such announcement no later than ten (10) days after TIGHAR notifies DCL of the Conclusive Discovery. TIGHAR shall have the right to review DCL press releases about a Conclusive Discovery for factual accuracy and must do so within 12 hours of its receipt of such release. For the avoidance of doubt, TIGHAR shall have the right to require the removal of its tradename from such release so long as the request is made during the 12 hour period. During the Exclusive Media Rights Period, TIGHAR agrees further to refer all press requests about the Program or a Conclusive Discovery to DCL's SVP of Communications and to allow DCL to coordinate all press activities relating thereto (e.g., press releases, interviews, press conferences, etc.). Before the premier of the Program, neither TIGHAR nor Gillespie may discuss the contents of the Program without first obtaining written permission from DCL; TIGHAR shall require in writing that Expedition Participants not discuss the contents of the Program before its premier as well. Nothing shall be construed as preventing Gillespie from soliciting or accepting paid speaking engagements.

1. Confidentiality. TIGHAR shall not disclose any Conclusive Discovery, defined below, or the results of the DNA Testing, which shall be confidential and governed by the Non-Disclosure Agreement attached as Exhibit B-2, and which shall be executed simultaneous to the execution of this Agreement. "Conclusive Discoveries" are discoveries that:
 - (a) are immediately or obviously identifiable as items from the Earhart plane wreckage or as belonging to Amelia Earhart or Fred Noonan. Examples of such items may include photos of the plane wreckage; artifacts with Earhart's or Noonan's name on them; an artifact with a serial number that matches the serial number of an object catalogued in the plane's inventory; identifiable plane wreckage; underwater video of plane wreckage, etc.; or
 - (b) appear to have the potential for a direct connection to Earhart, Noonan or their plane. Examples would be a bone or object that might yield DNA or airplane wreckage that might, after further research, prove to be from the plane. Without limiting the foregoing, TIGHAR may share artifacts, objects, photos, research or analyses that have the potential for a direct connection to Earhart, Noonan or their plane with subject matter experts, researchers and TIGHAR membership in an effort to ascertain whether the artifacts, objects, photos, research or analyses are Earhart or Noonan related.

2. Expedition Participant Non-Disclosure and Release. Further, TIGHAR shall obtain both an appearance release and a Non-Disclosure Agreement signed by each Expedition participant in the form to that which is attached hereto as Exhibit A-1 and B-1 ("Participant Agreements"), respectively. To the extent that DCL wishes to interview participants about the Expedition, then TIGHAR shall use best efforts to ensure participants' cooperation.

3. Miscellaneous:

A. Representations and Warranties. Each party represents and warrants to the other that it is not a party to any agreement, whether written or oral, preventing or interfering with the execution by it of this Agreement or the fulfillment by it of its obligations hereunder and that each party has the right to enter into this Agreement and perform all of its obligations hereunder. Gillespie represents and warrants that to the best of his knowledge, the Earhart Flight landed on Niku, and that the DNA laboratories TIGHAR is using to perform the DNA Testing are highly regarded in the field of genetic science as credentialed, first class laboratories qualified to perform the tests;

TIGHAR and Gillespie further represent and warrant as follows:

- i. TIGHAR and Gillespie will fully comply with all applicable international, national, federal, state, and local laws, rules, and regulations (including, without limitation, securing necessary work permits, visas, etc.) in connection with the Expedition;
- iii. The exploitation of the Past Expedition Materials as permitted herein will not violate any applicable law, rule, regulation, or right of any kind whatsoever or give rise to any actionable claim or liability.
- iv. Neither TIGHAR nor Gillespie will accept any money, service, or other valuable consideration for the inclusion of any matter in the Program.
- v. In order to maintain Company's worldwide reputation as a premier source of highly credible, non-fiction programming, all statements of fact by TIGHAR and/or Gillespie shall be true and accurate as of the date of delivery and acceptance and shall be substantiated by adequate research in keeping with generally accepted standards for first-class documentary film makers.

Each party shall at all times indemnify and hold harmless the other party, its affiliates, licensees, assignees and parent, subsidiary and affiliated companies, and the officers, directors, shareholders, employees and agents of all such entities against and from any and all claims, damages, liabilities, costs and expenses (including, without limitation, reasonable outside counsel fees and disbursements) arising out of any breach or alleged breach by it of any representation, warranty or

other provisions hereof. In the event of any claim or service of process upon a party involving the indemnification hereinbefore set forth, the party receiving such notice shall promptly notify the other of the claim. The indemnifying party will promptly adjust, settle, defend or otherwise dispose of such claim at its sole cost. If it so elects, the indemnified party shall have the right at its sole cost to engage its own counsel in connection with such claim. In the event that the indemnitee determines that the indemnitor is not diligently and continuously defending any such claim, the indemnitee shall have the right, on its own behalf and as attorney-in-fact for indemnitor, to adjust, settle, defend or otherwise dispose of such claim. Any costs incurred by the indemnitee in connection therewith shall be promptly reimbursed by the indemnitor, and if the indemnitor fails to so reimburse the indemnitee, the indemnitee shall be entitled to deduct such amounts from any other sums payable to the indemnitor under the Agreement.

- B. Factual Accuracy: Gillespie may review the "rough cut" of the Program and provide comments on such copy to DCL within three (3) business days of receipt (the "Review Period") for the sole purpose of identifying any content which is not factually accurate. DCL will give good faith and meaningful consideration to Gillespie's comments and will endeavor to correct any statements that it believes are factually inaccurate.
- C. Notices. Notices shall be in writing and delivered by personal delivery; electronic mail; first class certified or registered mail, return receipt requested; U.S. Express mail, or an express overnight service (such as Federal Express); or telecopier (with confirmation and concurrent mailing), addressed as set forth in this Agreement or such other address designated by a party in writing. Copies of notices shall go to counsel for TIGHAR: Bill Carter, Dean & Carter, PLLC, 121 North 9th Street, #402, Boise, Idaho 83702.
- D. Entire Agreement. This Agreement contains the entire agreement between the parties with regard to the subject matter of this Agreement and supersedes all prior agreements, arrangements, negotiations, and understandings, written or oral, relating to the subject matter hereof. This Agreement may not be changed or modified, in whole or in part, except by an instrument in writing signed by an officer of DCL and by Gillespie and an officer of TIGHAR.
- E. No Waiver. The failure of either party at any time or times to require performance of any provision of this Agreement, or to exercise any right, shall in no manner affect the right at a later time to enforce the same. No waiver by either party of the breach of any term or covenant contained in this Agreement, whether by conduct or otherwise, in any one or more instances, shall be deemed to be, or construed as, a further or continuing waiver of any such breach, or a waiver of the breach of any other term or covenant in this Agreement.

- F. Assignment. Neither TIGHAR nor Gillespie may assign this Agreement, or any portion thereof. DCL may assign this Agreement at any time, provided that no assignment shall relieve DCL of its obligations hereunder.
- G. Governing Law. This Agreement shall be governed and construed in accordance with the laws of the State of Maryland applicable to contracts entered into and fully performed therein without giving effect to principles of conflict of laws. All claims must be brought exclusively in federal court in Maryland, Greenbelt Division. In the event there is no subject matter jurisdiction in federal court or exclusive jurisdiction is vested in state court, the claims must be brought in Montgomery County Circuit Court, State of Maryland. The parties consent to personal jurisdiction and venue in the federal court of Maryland, Greenbelt Division and to the Montgomery County Circuit Court, Maryland and waive any objections based on personal jurisdiction or venue in those courts.
- H. Severability. If any part of this Agreement is found by a proper court to be unreasonable, then such part shall be considered amended to that considered reasonable by the court and, as amended, shall be enforced; all remaining terms and conditions shall continue in full force and effect. The invalidity or unenforceability of any provision or provisions of the Agreement shall not affect the validity or enforceability of any other provision of this Agreement, which shall remain in full force and effect.
- I. Surviving Paragraphs. The terms of this paragraph shall survive the expiration or termination of this Agreement for any reason. Further, the respective rights and obligations of the parties hereunder shall survive any termination of this Agreement to the extent necessary to carry out the intended preservation of such right.
- J. No Agency Partnership or Joint Venture. Nothing in this Agreement shall create a partnership or joint venture between the parties. Neither Gillespie nor TIGHAR, nor its employees or contractors, shall make any commitments or otherwise bind or enter into any contracts on behalf of DCL without the prior approval and consent of DCL in each instance. Nothing in this Agreement shall insinuate DCL to be a part of the Expedition. TIGHAR and Gillespie agree that the Expedition is a high risk endeavor and as between it and DCL, it shall be solely responsible for the Expedition and maintaining appropriate insurance in connection therewith.
- K. Termination. If, for any reason, TIGHAR does not go on the Expedition by June 30, 2010, then, at DCL's election, DCL may terminate this Agreement and any and all payments made by DCL to TIGHAR in accordance with this Agreement shall be returned immediately and in full to DCL. Either party shall have the right to terminate solely for material breach of this Agreement provided that the terminating party gives the party in breach 10 business days to cure such breach

following receipt of written notice of the breach. Notwithstanding the foregoing, TIGHAR shall not be entitled to seek equitable relief against DCL.

- L. No Obligation to Proceed. Nothing contained herein shall in any way obligate DCL actually to produce, exhibit, distribute, telecast, advertise or otherwise exploit the Program or the Past Expedition Materials or exercise any of the rights granted to DCL hereunder.
- 4. Contingencies:
- A. TIGHAR and Gillespie expressly agree that the fulfillment of DCL's obligations set forth hereunder is expressly contingent upon (each, a "Contingency"):
 - 1. Full execution of the following agreement(s) (each a "Related Agreement"), which, if entered into by TIGHAR, are subject to DCL's final approval prior to their execution:
 - a. the Gillespie Agreements governing Gillespie's consultant and talent services in connection with the Program;
 - b. Participant Agreements with all Expedition participants; and
 - c. Production agreement between DCL and Oh Seven Films.

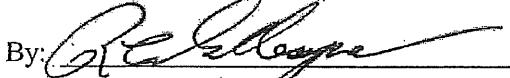
The parties understand that no portion of the DCL Fee will be released until all Contingencies are completely satisfied. Notwithstanding the foregoing, in the event that, for any reason, DCL, in its discretion, elects to release a portion of the DCL Fee hereunder prior to the satisfaction of any Contingency hereunder, such payment shall not be deemed a waiver of the applicable Contingency, and if any Contingency hereunder is not satisfied, DCL has the right to terminate this Agreement by written notice to TIGHAR, and TIGHAR shall reimburse DCL fully for all payments of the DCL Fee previously made by DCL hereunder as of the date of such termination.

INTENTIONALLY LEFT BLANK

APPROVED BY LEGAL

IN WITNESS WHEREOF, the parties have executed this Agreement as of the latest date set forth below.

THE INTERNATIONAL GROUP
FOR HISTORIC AIRCRAFT
RECOVERY

By: 

Printed Name: Richard E. Gillespie

Title: EXECUTIVE DIRECTOR

Date: 4/19/10

DISCOVERY COMMUNICATIONS,
LLC

By: 

Printed Name: TOM CASGROVE

Title: COO/EDP, DSC

Date: 4-23-10

RIC GILLESPIE

By: 

Printed Name: Richard E. Gillespie

Title: EXECUTIVE DIRECTOR

Date: 4/19/10

EXHIBIT 11

From: Pat Thrasher <tigharpat@mac.com>
Subject: Fwd: Funding AE Project
Date: March 22, 2012 9:28:39 PM EDT
To: Ric Gillespie <tigharic@me.com>

Uh.... ain't they gone? <G>

Begin forwarded message:

From: Timothy Mellon
<panam.captain@yahoo.com>
Subject: Funding AE Project
Date: March 22, 2012 6:58:21 PM EDT
To: "info@tighar.org" <info@tighar.org>
Content-Type: multipart/alternative;
boundary="-1682663710-1384960885-1332
457101=:97641"



I am interested in talking to Mr. Gillespie about funding opportunities for your Amelia Earhart and other projects. My phone is 307.745.0414, and I can be reached evenings and weekends the best.

Thank you,

Tim Mellon
Chairman, Pan American Airlines Corporation (Pan Am Systems)



EXHIBIT 12

05/21/2013 10:03 8604340408

BOX 1500 SARATOGA WY

PAGE 02



2812 Fawkes Drive • Wilmington DE 19808 • USA • 302.994.4410

Tim
TRied T^O
No ANSWER R.c
Via Fax

25 March 2012

Tim Mellon
Via Fax

Tim,

It was great chatting with you last night. I'll confess I was a bit puzzled by your preference for phone and fax rather than email ... until I'd had a chance to do a little research. No problem. I totally get it.

By the way, I have not mentioned your name and your interest in possibly helping the project to anyone but my wife Pat, and will not, unless and until you authorize such disclosure.

Tomorrow, Monday, I'll send you, via UPS for next day delivery on Tuesday:

- a DVD of the Discovery Channel show about our work
- a DVD of a short film I put together titled "An Aerial Tour of Nikumaroro"
- a signed copy of my book *Finding Amelia – The True Story of the Earhart Disappearance*
- a collector's folio of "The Harney Drawings" of Earhart's Electra

... and anything else I can fit in the box.

I'll also keep you up to date, via fax, on search plan and logistical developments.

For some reason, our fax machine sends faxes just fine but doesn't want to receive them. We'll get that sorted out but, meanwhile, don't hesitate to phone with any questions or comments. You can reach me on my mobile day or night at 302.584.2543.

Best regards,

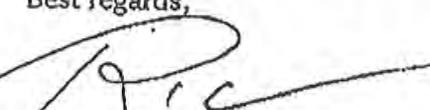
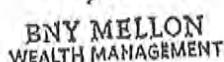

Richard E. Gillespie

EXHIBIT 13

05/21/2013 10:03 8604340408
 04/17/2012 08:56 4122361693

BOX 1500 SARATOGA WY
 MPONG PF

PAGE 04
 PAGE 02/04



John W. Lantz
 First Vice President
 (412) 234-4250 Office
 (412) 236-1693 Fax
 jwlantz@bnymellon.com

April 2, 2012

Mr. Richard E. Gillespie, Director
 The International Group for Historical Aircraft Recovery
 2812 Fawkes Drive
 Wilmington, Delaware 19808

070-7013
 Tim Mellon

Dear Mr. Gillespie,

This letter confirms that Mr. Timothy Mellon made a charitable gift on 11,900 shares of Philip Morris International common stock to The International Group for Historical Aircraft Recovery. Mr. Mellon's wish is that the funds be applied towards the cost of the NIKU VII Expedition.

In accordance with instructions, we delivered 11,900 shares of Philip Morris International common stock to your organization on March 30, 2012 as follows:

Broker: Boenning & Scattergood
 DTC Number
 Account Name: The International Group for Historical Aircraft Recovery
 Account Number
 Attention: Tim Donahue (610) 832-5261

The price range at which this stock traded on March 30, 2012, was a low of \$87.07 and a high of \$88.86, resulting in a mean price of \$87.97. The total gift value was \$1,046,843.

Please sign and return the enclosed copy of this letter confirming the instructions to transfer the stock and acknowledging receipt of the funds. You may acknowledge the gift by verifying there were no goods or services provided by The International Group for Historical Aircraft Recovery in exchange for this contribution to:

Mr. Timothy Mellon
 P.O. Box 1500
 Saratoga, WY 82331

Sincerely,

John W. Lantz
 John W. Lantz
 First Vice President
 JWLM/b

cc: Timothy Mellon

Signature: *B. J. Lantz*

Exco. Dir.

Date: 4/6/12

No Goods or
 Services were
 provided in exchange
 for this gift.
 Thank you,
JWL

One BNY Mellon Center, Suite 3725, Pittsburgh, PA 15258-0001

EXHIBIT

13

Mellon-00001

EXHIBIT 14

From: Richard Gillespie <tigharic@me.com>
Sent: Friday, August 10, 2012 1:45 PM
To: Jeff Glickman
Cc: Mark Smith
Subject: Video
Attachments: Niku_ROVdive03trk_AUVss.jpg; ROV Dive 3.docx; ROV Positioning Dive 3.xlsx

Jeff,

The Discovery show will air Sunday, August 19 at 10pm PT. It would be more than nice if we could come up with something interesting before then.

Mark is FedExing you a drive containing the 5 hours 32 minutes of HD video from ROV Dive 3 on July 14. Dive 3 covered the area shown in the attached graphic and in the attached ROV Dive Log. As you see, this dive spent quite a bit of time in the area just offshore where the object appears in the Bevington Photo (red marker) and also made an excursion southward to the Norwich City wreckage. If you see anything of interest in the video we should be able to establish it's general location by matching the time code in the video to the ROV Positioning Log also attached.

Also:

I have put in the shared TIGHAR DropBox folder, a half-resolution copy (the best I have) of 0035SB.mov, the ROV video clip from May 25, 2010 containing - at timecode 14:19:20 - the feature that looks to us like it could be a panel of light colored metal partially covered by coral debris. I sent you a small jpeg of this feature while I was still aboard KOK. Your impression was that it's probably a sand flow. Perhaps Mark can dig out the full resolution clip and stick it in the DropBox. The half-resolution file is 76.4 MB in size.

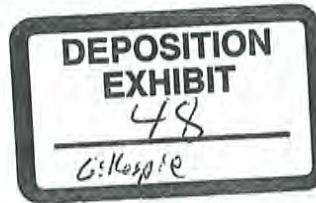
Ric



EXHIBIT 15

THANKS!

Brooke



This e-mail, and any attachment, is intended only for the person or entity to which it is addressed and may contain confidential and/or privileged material. Any review, re-transmission, copying, dissemination or other use of this information by persons or entities other than the intended recipient is prohibited. If you received this in error, please contact the sender and delete the material from any computer. The contents of this message may contain personal views which are not the views of Discovery Communications, Inc.

From: Brooke Runnette
<Brooke_Runnette@discovery.com>
Subject: Re: Jeff's findings
Date: August 16, 2012 9:59:09 AM EDT
To: "tigharic@mac.com" <tigharic@mac.com>,
"michaelbicks@littlebaypictures.com"
<michaelbicks@littlebaypictures.com>,
"steven.b.schnee@gmail.com"
<steven.b.schnee@gmail.com>

Holy smokes! OK let me see if I can get a bridge, shall we say in 40 mins at 10:30?

From: Richard Gillespie [mailto:tigharic@mac.com]
Sent: Thursday, August 16, 2012 09:52 AM
To: Brooke Runnette
Subject: Jeff's findings

G'mornin' Brooke,

Cutting to the chase: We have what appears to be a



debris field just offshore where the "landing gear" object appears in the 1937 Bevington Photo.

Below are Jeff's preliminary findings with screen shots from three sections of the July 14 ROV video.

- The first screen shot -10:14:52 - is the most interesting and may, in fact, show pieces of the landing gear that we see in the Bevington Photo.
- The second screen shot - 12:17:49 - appears to be a sheet of light-weight metal with rivet holes.

Both are on the reef slope at the base of first vertical cliff - right where wreckage "should" be if our hypothesis is correct.

- The third screen shot - 13:48:18 - is a non-starter. The objects that caught Jeff's attention are sea urchins. We saw lots of them

Standing by to talk when you're ready.

Ric

Begin forwarded message:

From: Jeff Glickman <jeff@glickman.com>

Subject: Preliminary Review of 7/14/2012 ROV Video

Date: August 16, 2012 4:38:44 AM EDT

To: 'Ric Gillespie' <tigharic@mac.com>

Ric,

I am in receipt of the file 7_14-ROV.m4v, which consists of 5 hours, 36 minutes and 59 seconds of 7/14/2012 ROV video imagery.

I have made a cursory review of this video, so the following preliminary information is an informal report and is subject to change based upon further examination and analysis.

Mark Smith estimates that there is a total of about 19 hours of video from the expedition, so I have thus far made a cursory review of less than 30% of the expedition's video.

The following table is a summary of observed objects in 7_14-ROV.m4v in ROV timecode order.

The entries in red have corresponding photographs attached and will be discussed below.

ROV Timecode	Object Description
10:14:52	semicircle at top; round object off to right
10:56:14	large diameter pipe
10:56:28	ragged edge & smooth edge metal sheets; metal angle
10:56:58	metal with large double bolt or rivet lines
10:57:51	wire or thin rod
11:00:56	pipe or bar debris in distance, center screen
11:01:50	non-specific debris
11:02:57	machinery
11:04:02	connecting rod or piston, right center screen
11:04:25	metal sheet with angle with small rivet lines
11:04:28	various non-specific debris
11:04:48	various non-specific debris
11:05:01	metal with double bolt or rivet lines
11:09:52	metal sheet

11:10:44	metal debris
11:12:01	beam or bar debris in segments
11:12:08	large structural debris
11:12:16	flat metal component possibly with rivets and/or handle or pi
11:12:47	metal with double bolt or rivet lines; metal angle with large b
11:14:06	pipe segments; possibly with copper content
11:15:07	structural metal
11:17:41	cylindrical tank with straps, left center
11:18:00	metal debris with double bolt or rivet lines
11:19:49	structural metal; pulley
11:22:13	T-shaped structure, metal, edge-on
12:17:49	rectangular object, possible rivet lines lower left
13:48:18	small dark circular object; center right
13:48:24	2 nd small dark circular object; lower left

Based upon the ROV track, the ROV explored two primary areas on 7/14/2012: In and around the Bevington object; and adjacent to the SS Norwich City.

The objects observed in the 7/14/2012 video imagery correlate with these two areas.

One interpretation of the video evidence is that there are two debris fields: One associated with the Bevington object and one associated with the SS Norwich City:

Based upon the ROV track, the objects associated with the four ROV time codes 10:14:52 , 12:17:49, 13:48:18, 13:48:24 are associated with the Bevington object.

The remainder of the time code objects are associated with the SS Norwich City, which appear to be consistent with the construction and materials of the SS Norwich City.

Based upon information you provided, the objects seen in timecode 10:14:52 are located approximately 300' south of the Bevington object on a reef shelf at a depth of about 166'.

Multiple objects are seen in 10:14:52 which, as a collection, may be consistent with the Bevington object. Timecode 10:14:52 warrants further examination and analysis.

Timecode 12:17:49 may be a piece of metal and due to its proximity to the Bevington object also warrants further examination and analysis. Alternatively, it could be marine flora or fauna.

Timecode 13:48:18 may be a gauge or a bearing and also warrants further examination and analysis. Alternatively, it could be marine flora or fauna.

Sincerely,

Jeff B. Glickman, BSCS, BCFE, FACFE, DABFE
PHOTEK – First in Forensic Imaging
President-Elect, American Society for Photogrammetry and Remote Sensing, Puget Sound Region

Senior Member, Institute of Electrical and Electronics Engineers
Board Certified Forensic Examiner
Fellow, American College of Forensic Examiners
Diplomate, American Board of Forensic Examiners

unknown.jpg ↵
19405 148th Ave NE
Woodinville, WA 98072
Phone: (425) 908-7601
Fax: (866) 201-0239
Email: jeff@glickman.com

1_#\$_!@%!#_unknown.jpg ↵2_#\$_!@%!#_unknown.jpg
-3_#\$_!@%!#_unknown.jpg ↵

This e-mail, and any attachment, is intended only for the person or entity to which it is addressed and may contain confidential and/or privileged material. Any review, re-transmission, copying, dissemination or other use of this information by persons or entities other than the intended recipient is prohibited. If you received this in error, please contact the sender and delete the material from any computer. The contents of this message may contain personal views which are not the views of Discovery Communications, Inc.

From: Brooke Runnette
<Brooke_Runnette@discovery.com>
Subject: Re: Jeff's findings
Date: August 16, 2012 11:17:42 AM EDT
To: Richard Gillespie <tigharic@me.com>
Cc: "michaelbicks@littlebaypictures.com"
<michaelbicks@littlebaypictures.com>,
"steven.b.schnee@gmail.com"
<steven.b.schnee@gmail.com>

Ric, What I'd like to do is see if we can get Discovery News to push this tomorrow, in anticipation of the show. By any means necessary! Do you think Jeff would be willing to do an interview with Rossella? That way we can try to turn the tide of the coverage as well as push the show...

Stand by, though, don't do anything yet until I see about using the forces at my disposal....

Thanks!

EXHIBIT 16

Date	Object #	Depth	Tag	HD Folder	HD Clip	HD Time In
7-Jun-10	Object 10	253m	Rope w/loop	ROV 14	0012XO	13:36:10
7-Jun-10	Object 11	255m	Wire	ROV 14	0012XO	13:40:16



AVI Folder	AVI Clip	AVI Time In	Jesse Description
7-Jun-10	Mon_07_Jun_13_33	13:36:08	Small diameter rope
7-Jun-10	Mon_07_Jun_13_33	13:43:06	Circle wire like object

EXHIBIT 17

Jeff Glickman

From: Jeff Glickman <jeff@glickman.com>
Sent: Thursday, September 27, 2012 11:27 AM
To: 'Richard Gillespie'
Subject: RE: board meeting and images

Hi Ric,

For Saturday please use my Skype address "Jeff.Glickman.Lenovo". Would it be possible to start at 9a your time on Saturday instead of 10a? My daughter will get up around 11a your time, so leaving some extra time by starting earlier would be better for me.

Do you have a list of potential images or would you just like me to review some that I have for presentation? Are you planning to put them into a Keynote presentation? I would definitely show the unprocessed and processed Dive3 images as an example of how the random nature of the marina flora and fauna can create patterns that trick the mind into seeing things that aren't there. This example illustrates why we need to be diligent in our examination of the dive footage.

From the perspective of probabilities, here are my opinions. These are subjective and are based upon my knowledge and experience as opposed to being objective, calculated probabilities.

1. **What is the probability that we have found man-made items in the dive imagery?** 100%
There are key features in the patterns of shape and texture that can be used to differentiate man-made objects from natural objects, in this case, marine flora and fauna. These key features are present in several locations in the dive videos.
2. **What is the probability that we have found man-made items that do not originate from the Norwich City?** 100%
The Norwich City man-made debris is differentiated both in location and by material and construction. The Norwich City debris is comprised of heavy, bulky materials, that are both close and below the wreck. There is additional man-made debris that is below and near the Bevington Object that is not bulky, but instead are smaller and lighter-weight in appearance.
3. **What is probability that the man-made items that we have found in the dive imagery are related to the Bevington object?** 80%
We have located a man-made debris field that is in the location that was expected and for which the shapes of the objects in the debris field are consistent with the object(s) seen in the Bevington image.
4. **What is the probability that Bevington object is a Lockheed Electra 10E landing gear?** 80% (Previously 60%)
Ric has recently proposed an alternate segmentation of the Bevington image that I support. This reparsing is forensically consistent with the landing gear fork and increases my confidence that the Bevington object may be a Lockheed Electra landing gear.

Yes, you are welcome to quote me. Mark did a great job with the video – thanks.

Jeff



EXHIBIT 18

Exhibit E

Dr. Kaufman's Report

Boston University

Department of Biology
5 Cummington Street
Boston, MA 02215
www.bu.edu/biology
617/353-2432
Fax: 617/353-6340



April 13, 2014

Gentlemen/women,

I have examined the evidence concerning claims that ROV video footage obtained by TIGHAR at Nikumaroro Island reveals pieces of the airplane flown by Amelia Earhart on her ill-fated round-the-world flight of 1937. Though intimately familiar with coral reef environments around the world, including a wide array of submerged objects, both natural and man-made, I am unable to conclude that the debris visible on the disputed video is attributable to Earhart's aircraft, or for that matter, any aircraft. The analysis in support of this contention was ingenious and does open up at least the suggestion that aircraft remains might be visible on the video, but it is in my judgment an utterly, vanishingly small probability. It is much more likely that the objects cited are natural bits of carbonate rock plus a few lengths of rope and pieces of metal of obscure, and most likely fairly recent origin.

I am a marine biologist who specializes in coral reef biology and geology. I have been diving on and studying coral reefs in the Pacific, Atlantic, and Indian oceans for more than forty years, totally approximately 2500 SCUBA dives, four prolonged saturation and surface-support missions, and the routine use of several remote operated and benthic camera sled vehicles. In addition, I have for the past six years been an active member of the Phoenix Islands Protected Area Research Team. I was on a month-long 2009 expedition to PIPA that included a several-day stay at Nikamaruro Island and use of an ROV to study areas near, but shallower than (70 to 90 meters vs. ca. 250+ meters) the debris site in question. I also visited the island and snorkeled areas between the main channel and the Norwich City wreck, in addition to dives on the seaward face of the reef around the atoll edge at our regular study sites. During my career I have had occasion to examine a very wide range of metallic and other man-made objects that had been lost or abandoned in coral reef environments for anywhere from a few days to many decades or centuries underwater. This has included a good deal of military and aeronautical debris. I am also frequently involved in the analysis and interpretation of underwater video as part of our assessment work on coral reefs, in the Gulf of Maine, and in tropical great lakes.

EXHIBIT

tabbies®

18

The experts consulted in the Mellon disclosure claim to see aircraft wreckage in the deep video taken by TIGHAR during the 2010 Niku VI Expedition. I have examined said video prior to, and after having examined the expert reports and exhibits associated with the Mellon disclosure.

The methods used to construct, rotate, scale, and superimpose outlines of known plane parts upon objects seen in the video were effortful and clever. However, I did not find the demonstration convincing. All that I could make out unambiguously on the video, even after the powerful suggestions brought forward by the superimposed diagrams, were two pieces of rope of different gauge, a circular piece of wire, a few other pieces that could conceivably be man-made debris, and a very great deal of largely unconsolidated carbonate reef rock. Carbonate reef rock is simply limestone that was secreted in a particular shape by hard corals, coralline algae, or some combination of one growing upon the other. Some individual pieces of carbonate visible in the video could understandably be taken to suggest artificial objects due to smoothly rounded or crossed forms. However, many of the massive coral species in the Phoenix Islands (most especially massive *Porites spp.* and *Montipora spp.*) exhibit cleanly spherical or saucer-shaped growth forms that could easily be mistaken for an encrusted wheel of some sort, are extremely abundant, and span the appropriate size ranges. Also, much of the coral debris that falls down the fore-reef slope includes bits of branching corals which, when intersecting, fused, and subsequently broken free, will frequently resemble the form of a cross or an "X" and thus appear, convincingly to some, to be of human artifice.

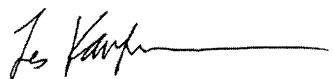
One surprising aspect of the video is the relatively small amount of carbonate mud or silt overlying the rocks at that depth. I noticed this myself while exploring the shallower reaches of the reef with an ROV in 2009, and I've also seen similar videos taken on earlier PIPA Research Team expeditions. I attribute the low volume of visible silt to the steepness of the reef face and the strength of the ambient currents. The combination of poor consolidation and limited silt amplifies the appearance of there being many separate objects of interesting shapes scattered about. On a more gradually sloping reef face the carbonate rubble is usually more deeply immersed in carbonate sediment and much less distinctive in its presentation.

In order for to regard the expert claims as worthy of further attention, a minimum of three conditions would need to be met. First, there must be a rigorous analysis of alternative interpretations. The disclosure's arguments for the identity of individual objects as pieces of not only *an* aircraft but *the* aircraft are certainly titillating, but they are subjective and entirely lacking in rigor. Second, there must be estimation error associated with each purported object identification- in other words, how good is the fit, by what means can a differential diagnosis be conducted, and how many other, similar fits could be found in the fields of view? Finally, it is important to remain skeptical of any purported identification unless the object has been examined directly. At a minimum, it is necessary to turn over and reposition an object several times to be certain that a postulated identity survives multiple perspectives. Of course, best is to assess the object in such a way as to see through the overlying layers of carbonate encrustation, either by exfoliating them, or more conservatively, but examining the object under x-ray illumination. Nothing of the sort can be done with only a video in hand.

Case 1:13-cv-00118-SWS Document 40 Filed 04/15/14 Page 66 of 66

In sum, I must unfortunately conclude that not only does the work in the disclosure **not** constitute evidence for an aircraft debris field, but if anything it highlights how difficult it may actually be to detect bits and pieces of Earhart's plane should someone at last come upon the genuine articles. This is sobering, for although my interest in Nikumaroro Atoll is focused on the health of the coral reef, wildlife, and surrounding waters, the possibility of finding evidence of Earhart's former presence there is tremendously exciting. Consequently, all of us who visit this site are highly, even passionately motivated to try and do so. As scientists, however, we must remain assiduously objective. From such an objective standpoint, I regret to have to say that I am entirely unconvinced, and not even mildly suspicious, that the 2010 TIGHAR expedition produced evidence of an aircraft debris field on the reef at Nikumaroro. Furthermore, I am highly skeptical that any amount of further analysis or review of this video, in the absence of material evidence based upon manipulation and close physical study of the objects in question, will be likely to alter this conclusion.

Sincerely,



Les Kaufman
Professor of Biology
Boston University Marine Program
And
Marine Conservation Fellow
Conservation International

EXHIBIT 19

Part Number 41065

Revised and reprinted from the October, 2011 edition of *TIGHAR Tracks*.

As explained in "The Object Formerly Known As Nessie," one of the elements that appears to be identifiable in the Bevington Photo is part of the retraction mechanism listed in the Lockheed Model 10 Parts Catalog as "Part Number 41065, Gear, worm." If our identification of the part is correct, its presence in the photo guarantees that the wreckage on the reef in the 1937 photo is specifically from the Earhart aircraft.

In 1936 Lockheed made a major change in the landing gear retraction mechanism of the Model 10. Earhart's Model 10E Special, delivered on July 24th of that year, was the last of only 54 Electras built with the original system – Lockheed Landing Gear Installation 40650.¹ When you know what to look for the change is easy to spot, but it took a bit of research to piece together how and why the modification was made.

NEW COMPANY, NEW STAR

Introduced in 1934, the Model 10 was the tenth design marketed by Lockheed. Like the earlier Model 5 "Vega," Model 8 "Sirius," and Model 9 "Orion," the new design was named for a star, in this case "Electra," the "lost star" of the Pleiades cluster in the constellation Taurus. Despite the appearance of continuity, this was a new Lockheed Aircraft Corporation and the new airplane was a

radical departure from previous designs. Lockheed had built its reputation on fast single-engine airplanes with sleek molded-plywood bodies and cantilevered wooden wings designed by Jack Northrop and flown by customers with names like Post, Earhart, Lindbergh and Kingsford-Smith. However, fame proved to be no antidote to the Great Depression and on June 16, 1932 the doors of the Burbank factory were closed.

Just five days later Lockheed Aircraft Corporation was reborn, its assets purchased by a group of investors for \$40,000. A new design team headed by Lloyd C. Stearman began sketching out an all metal, ten-seat, single-engine airliner until the primary investor and new Treasurer, Robert Ellsworth Gross, convinced them that the future of commercial sales was in multi-engine aircraft. A second engine was added and the new Lockheed company's first offering was an all-metal, twin-engine, low wing monoplane with retractable landing gear.²



Introduced in 1934, the first Electra – c/n 1001 – featured the then-fashionable forward slanting "Fokker style" windshield.



The Vega in which Earhart flew the Atlantic was typical of the classic Lockheed designs of the late 1920s and early '30s.

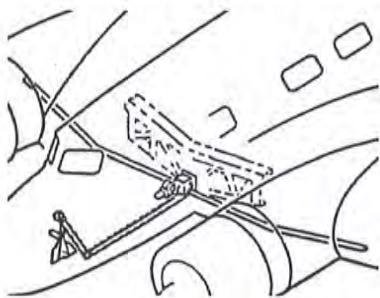
THE FLYING CEMENT MIXER

Ike the rest of the airplane, the system devised for retracting the wheels was straightforward and robust. Steel drive shafts extended out from a centrally mounted electric motor and transmission. A "worm" on the end of each shaft engaged the cogs of a steel "worm gear" – Part Number 41065 – bolted to the rear of each landing gear

EXHIBIT

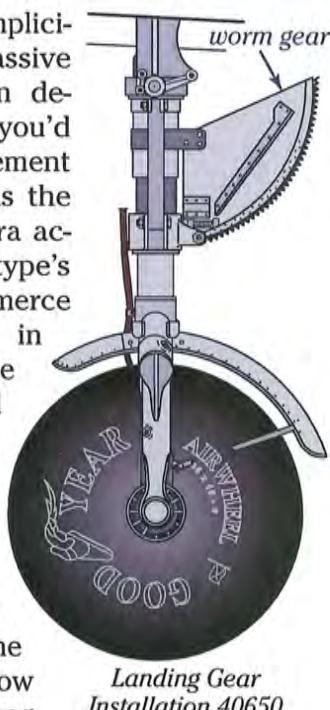
19

strut. When the shaft rotated, the worm walked the worm gear and the attached strut and wheel rearward and upward into the engine nacelles.



As illustrated in the Model 10 Maintenance Parts Catalog, the Electra's retractable landing gear was driven by steel shafts that extended out from an electric motor and transmission mounted on the girder-like main beam.

The price of simplicity was weight. The massive "worm gear" has been described as "something you'd normally see on a cement mixer" and its bulk was the cause of the first Electra accident. On the prototype's final Bureau of Air Commerce certification test flight in August 1934 one of the wheels failed to extend for landing. Apparently one of the drive shafts was not up to the task. Lockheed test pilot Marshall "Babe" Headle made a successful one-wheel landing but the cost of repairs was a blow to the struggling young company.³



Landing Gear Installation 40650

LEARNING FROM JUNIOR

Despite some birthing pains, the Model 10 was well received and by the end of 1935 nearly fifty Electras had been delivered to airlines such as Northwest, Pan American, Eastern, and Delta.⁴ Hoping to expand on the success of the basic Model 10 formula, Lockheed entered a Bureau of Air Commerce design competition for a small twin-engine transport to serve feeder lines. By scaling down to a shorter fuselage with accommodation for six, rather than ten, passengers while keeping the same 450 HP engines, the Model 12 "Electra Junior" (there was no Model 11) would be faster and have better over-all performance than the Model 10, but weight reduction would be key. In the end, the Model 12 weighed in



In this photograph the worm gear can be seen on the left main landing gear strut of Earhart's Electra.

a full 18% lighter than its big sister, aided in large part by a new, lighter, faster landing gear retraction system.⁵ Instead of the clunky worm gear, the Electra Junior's landing gear featured an articulating "knuckle" that was hinged in the middle and jack-knifed forward as the wheel was pulled up and back.



The Model 12 Electra Junior was smaller, lighter and faster than its big sister.

Babe Headle made the first takeoff in the prototype Model 12 on June 27, 1936, three days before the Bureau of Air Commerce competition deadline. The new design clocked a top speed of 225 mph at 5,000 feet and delivered a cruising speed of 213 mph (compared to 202 mph and 190 mph for the Model 10A) and won the Bureau of Air Commerce competition.⁶ Adapting the new retraction system to the Model 10 was a no-brainer and, beginning with constructor's number (c/n) 1056 – a Model 10B delivered to Chicago & Southern Airlines – Landing Gear Installation 45100 replaced 40650 on all subsequent Electras.

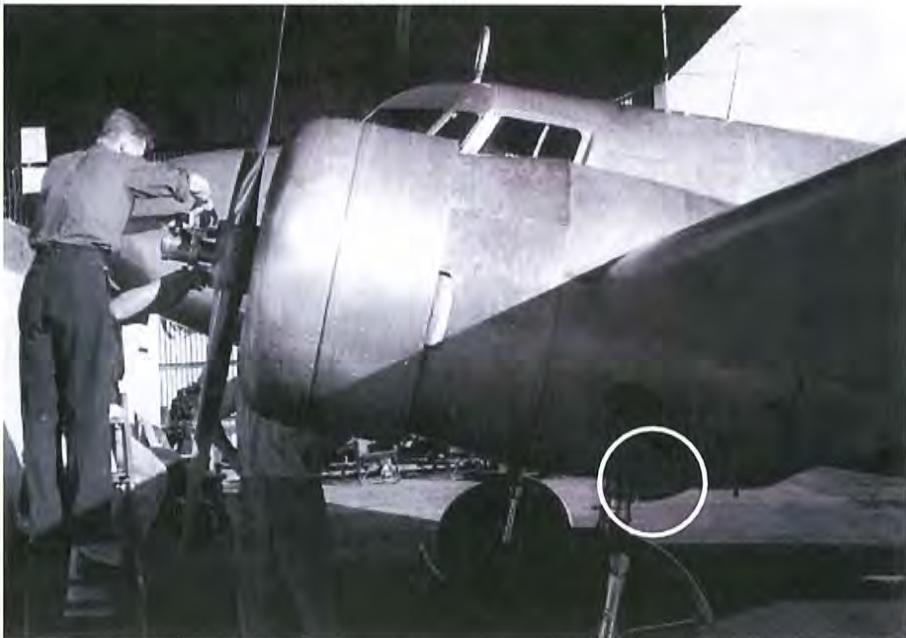


In this photo of Lockheed Model 10A c/n 1130, under rebuild at the National Museum of Naval Aviation, the "new" retraction system – Installation 45100 – is clearly visible.



Lockheed test pilot Marshall "Babe" Headle with Amelia Earhart. "You see Amelia? We got rid of that heavy worm gear mechanism like the one on your airplane and replaced it with this new drag strut system." Ironically, the Electra in the photo is Model 10A c/n 1060, registered VH-UXH and destined for Guinea Airways in Lae, New Guinea.

In Lae, New Guinea Fred Noonan assists with maintenance on the left engine propeller hub of NR16020. The bottom edge of the worm gear is clearly visible on the rear side of the left main landing gear strut.



Earhart's Model 10E Special, c/n 1055, was the last airplane built with the old worm gears.⁷ It is a bit surprising that the system was not upgraded when the airplane was in the shop for extensive repairs following the Luke Field debacle but that was probably because time and money were in short supply. Photos of NR16020 in Lae, New Guinea leave no doubt that the airplane still had the 40650 system when it disappeared.

If we have a photo of a worm gear on the reef at Gardner Island (now Nikumaroro), what aircraft could it be from? Of the fifty-four Electras that had worm gears, only two airplanes ever traveled west of California. Model 10A, c/n 1034, was delivered to the Mesta Machine Co. in Pittsburgh, PA in August 1935 and, at some later time, was sold to Qantas Empire Airways in Brisbane, Australia. That airplane was destroyed in a crash near Charlville, Queensland in February 1949.⁸ The only other candidate is Amelia Earhart's Model 10E Special, c/n 1055, and the wreckage on the reef can only be from that aircraft ... unless somebody misplaced a cement mixer. ♦

NOTES

- 1 Lockheed Model 10 Maintenance Parts Catalog – 1939.
- 2 Francillon, René. *Lockheed Aircraft since 1913*, Naval Institute Press, 1987.
- 3 Emmert & Larkins. "Lockheed's Model 10 Electra" in *Journal of the American Aviation Historical Society*, Summer 1978.
- 4 *Ibid.*
- 5 Francillon.
- 6 *Ibid.*
- 7 Lockheed.
- 8 Emmert & Larkins.